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DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
CHARLES D. WALCOTT, DIRECTOR

BIBLIOGRAPHY AND INDEX

OF

NORTH AMERICAN GEOLOGY, PALEONTOLOGY, PETROLOGY, AND MINERALOGY

FOR

THE YEAR 1904

BY

FRED BOUGHTON WEEKS

WASHINGTON
GOVERNMENT PRINTING OFFICE
1905

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LETTER OF TRANSMITTAL.

Department of the Interior,
United States Geological Survey,
Washington, D. C., June 7, 1905.

Sir: I transmit herewith the manuscript of a bibliography and index of North American geology, paleontology, petrology, and mineralogy for the year 1904, and request that it be published as a bulletin of the Survey.

Very respectfully,

F. B. Weeks.

Hon. Charles D. Walcott,
Director United States Geological Survey.

BIBLIOGRAPHY AND INDEX OF NORTH AMERICAN GEOLOGY, PALEONTOLOGY, PETROLOGY, AND MINERALOGY FOR THE YEAR 1904.

By FRED BOUGHTON WEEKS.

INTRODUCTION.

The arrangement of the material of the Bibliography and Index for 1903 is similar to that adopted for the preceding annual bibliographies, Bulletins Nos. 130, 135, 146, 149, 156, 162, 172 (combined in Bulletins 188 and 189), 203, 221, and 240.

Bibliography.—The bibliography consists of full titles of separate papers, arranged alphabetically by authors' names, an abbreviated reference to the publication in which the paper is printed, and a brief description of the contents, each paper being numbered for index reference.

Index.—The subject headings, their subdivisions and arrangement, are shown in the classified key to the index, which immediately precedes the index. Reference is made in each entry by author's name and number of article in the bibliography.

The series of annual bibliographies has been prepared solely from publications received by the library of the United States Geological Survey. On January 1, 1903, the writer was placed in charge of the library of this organization, and an effort has since been made to procure the publications which were not noticed in the bibliographies of previous years, it being known that there were a considerable number of omissions of geological papers. Many of these are noted in this bulletin.

Mr. John M. Nickles has again assisted in the compilation of this work, and credit is due him for its careful preparation and completeness.

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1. The Copper River country, Alaska.

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   U. S. Geol. Surv., Bull. no. 225, pp. 497–500, 1904.

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1. Economic geology of the Iola quadrangle, Kansas.

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   Gives data in regard to the Bacubirito meteorite.

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1. Criaderos de petroleo de Pichucalco, Estado de Chiapas [México].

   Soc. Cient. Antonio Alzate, Mem. y Rev., t. 13, pp. 327–335, 2 pls., 1903.
   Describes the occurrence, geologic relations, and character of petroleum from this locality.

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1. A new oyster from the Eocene of Alabama.

   Nautilus, vol. 18, p. 61, 1 pl., 1904.

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1. A fossil porcupine from Arizona.

   Am. Mus. Nat. Hist., Bull., vol. 20, pp. 383–384, 1904.

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1. The Norton coals of the Big Sandy basin.

   Eng. & Mg. Jour., vol. 77, pp. 235–236, 2 figs., 1904.
   Describes the location, topography, and general geology of the field, and the character, occurrence, and geologic relations of the coal seams.

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1. Bibliography of Canadian geology and paleontology for the year 1902.

   Can. Roy. Soc., Proc. & Trans., 2d ser., vol. 9, sect. 4, pp. 173–188, 1903.

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1. Stratigraphy of the southern Coast ranges of California.

   Abstract: Geol. Soc. Am., Bull., vol. 15, pp. 581–582, 1904.

Angermann (Ernesto).

1. Informe acerca de la fisiografía, geología e hidrología de los alrededores de La Paz, Baja California.

   México, Bol. de la Secretaría de Fomento, 2ª. ép., año 3, IV, pp. 216–283, 1904; México, Inst. Geol., Par., t. 1, pp. 31–49, 2 pls., 1904.
   Gives physiographic, geologic, and hydrologic observations upon the environs of La Paz in Lower California.

Angermann (Ernesto)—Continued.

2. Apuntes sobre el Paleozoico en Sonora [México].

México, Inst. Geol., Par., t. 1, pp. 81–90, 1 pl., 1 fig., 1904.

Gives observations upon the occurrence and character of the geologic formations of Sonora, particularly upon Paleozoic deposits.

3. El fierro meteórico de Bacubirito (Est. de Sinaloa).

México, Inst. Geol., Par., t. 1, pp. 113–116, 1 pl., 1904.

Observations upon size and occurrence of the meteorite of Bacubirito, Mexico.

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1. The Alberta [Canada] coal field.

Mg. Rep., vol. 50, pp. 548–550, 3 figs., 1904.

Gives notes upon the general geology of the region, and describes the occurrence and character of the coal beds, and the character of the coals.

Arnold (Ralph).

1. Faunal relations of the Carrizo Creek beds of California.

Abstract: Science, new ser., vol. 19, p. 503, 1904.

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1. The Miocene diabase of the Santa Cruz Mountains in San Mateo County, California.

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Ashley (George H.).

1. The Cumberland Gap coal field of Kentucky and Tennessee.

U. S. Geol. Surv., Bull. no. 225, pp. 259–275, 1904.

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3. [Geologic structure of the region around Middlesboro, Ky.]

Abstract: Science, new ser., vol. 19, p. 856, 1904.

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1. The genesis of the gold deposits of Baskerville (British Columbia) and the vicinity.

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B.

Babcock (E. N.) and **Minor** (Jessie).

1. The Graydon sandstone and its mineral waters.

Drury Coll., Bradley Field Geol. Station, Bull., vol. 1, pp. 22–31, 1904.

Describes the character and occurrence of the sandstone and discusses its origin and bearing upon the geologic history of the region. Describes mineral waters coming from the sandstone.

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1. Earthquakes in New Mexico.

   Am. Geol., vol. 34, pp. 102–104, 1904.

2. Secondary enrichment in the Santa Rita district [New Mexico].

   Eng. & Mg. Jour., vol. 77, pp, 153–154, 1904.

   Describes character and occurrence of copper deposits.

3. Systematic paleontology of the Miocene deposits of Maryland: Foraminifera.

   Md. Geol. Surv., Miocene, pp. 460–483, 3 pls., 1904.

Bailey (G. E.).

1. The desert dry lakes of California.

   Mg. & Sci. Press, vol. 89, pp. 138, 161, 174, 192–193, 205–206, 222–223, 241–242, 255, 8 figs., 1904.

   Describes physiographic features and the occurrence and production of borax.

Bailey (L. W.).

1. Report upon the Carboniferous system of New Brunswick with special reference to workable coal.

   Can. Geol. Surv., Ann. Rept., new ser., vol. 13, 38 pp., 1903. (Published separately, 1902.)

   Describes the extent, geologic structure, and divisions of the Carboniferous of New Brunswick, and the character, occurrence, and possible production of the coal beds, gives lists of fossils, and discusses the geologic horizon of certain beds.

2. New Brunswick caves.

   New Brunswick Nat. Hist. Soc., Bull., vol. 5, pp. 155–169, 2 pls., 1904.

   Discusses the origin of the various caves described and the geologic formations in which they occur.

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1. Fluorspar deposits of southern Illinois.

   U. S. Geol. Surv., Bull. no. 225, pp. 505–511, 1904.

   Reviews history of the development of the fluorspar deposits, describes the geology of the district, and the character and occurrence of the ore bodies, and discusses their origin.

2. [Geological nomenclature.]

   Jour. Geol., vol. 12, pp. 65–66, 1904.

3. Reported gold deposits of the Wichita Mountains [Oklahoma].

   58th Cong., 2d Sess., Sen. Doc. no. 149, 10 pp., 1904.

   Describes the investigation of reputed gold deposits in Oklahoma. Includes a report on the assays by E. T. Allen.

4. Reported gold deposits of the Wichita Mountains.

   U. S. Geol. Surv., Bull. no. 225, pp. 120–122, 1904.

   Describes the general geology and the prospecting for gold.

5. Reported ore deposits of the Wichita Mountains.

   U. S. Geol. Surv., Professional Paper no. 31, pp. 82–93, 1904.

Bain (H. Foster)—Continued.

6. Lead and zinc deposits of Illinois.

U. S. Geol. Surv., Bull. no. 225, pp. 202–207, 1904.

Describes the general geology, character, occurrence, and origin of the ore deposits of lead and zinc.

7. Fluorspar deposits of the Kentucky-Illinois district. Grades of ore, geology of the district, and genesis of the ores.

Mines & Minerals, vol. 25, pp. 182–183, 1 fig., 1904.

Describes the character, occurrence, geologic relations, genesis, and production of fluorspar deposits of southern Illinois and western Kentucky.

8. The zinc deposits of Missouri.

Lead & Zinc News, vol. 8, pp. 223–225, 1904.

Describes the general geology of the zinc districts of Missouri, with a generalized section of the Boone formation, the geological structure, and the character, occurrence, and origin of the zinc-ore deposits.

Baker (M. B.).

1. On the occurrence and development of corundum in Ontario.

Can. Mg. Inst., Jour., vol. 7. Advance separate, 12 pp., 1904.

Ball (Sydney H.).

1. The deposition of the Carboniferous formations of the north slope of the Ozark uplift.

Jour. Geol., vol. 12, pp. 335–343, 3 figs., 1904.

Describes the occurrence and character of Carboniferous strata and the geologic history of their deposition.

Ball (Sydney H.) and **Smith** (A. F.).

1. The geology of Miller County [Missouri].

Mo. Bur. Geol. & Mines, 2d ser., vol. 1, pp. 1–197, 18 pls., 56 figs., 1903.

Describes the physiography and drainage, the character, occurrence, geologic relations, and economic resources of Cambro-Ordovician and Carboniferous formations, including numerous sections of strata, and discusses the general geologic structure and the origin of chert and dolomite.

Ball (S. H.) and **Smith** (A. F), **Buckley** (E. R.).

1. Glacial boulders along the Osage River in Missouri.

See Buckley (E. R.), Ball (S. H.), and Smith (A. F.), 1.

Barber (William Burton).

1. On the lamprophyres and associated igneous rocks of the Rossland mining district, British Columbia.

Am. Geol., vol. 33, pp. 335–347, 6 pls., 1904.

Barbour (Erwin H.).

1. Memoir of Wilbur Clinton Knight.

Geol. Soc. Am., Bull., vol. 15, pp. 544–549, 1 pl. (port.), 1904.

Includes a list of his published writings.

Barlow (Alfred Ernest).

1. Report on the origin, geological relations, and composition of the nickel and copper deposits of the Sudbury mining district, Ontario, Canada.

Can. Geol. Surv., Ann. Rept., vol. 14, pt. H, 236 pp., 24 pls. and 5 maps, 1904.

Barney (W. G.).

1. The Silver Bell Mountains, Arizona.

Eng. & Mg. Jour., vol. 78, pp. 755–756, 1904.

Describes the occurrence, character, and geologic relations of copper-ore deposits.

Bascom (Florence).

1. Water resources of the Philadelphia district.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 106, 75 pp., 4 pls., 3 figs., 1904.

Includes a short general account of the physiography and stratigraphy, and of the igneous and sedimentary rocks of the area.

Baskerville (Charles) and **Kunz** (George F.).

1. Kunzite and its unique properties.

Am. Jour. Sci., 4th ser., vol. 18, pp. 25–28, 2 figs., 1904.

Bassler (R. S.), **Ulrich** (E. O.) and.

1. A revision of the Paleozoic bryozoa. Part I. On genera and species of Ctenostomata.

See Ulrich (E. O.) and Bassler (R. S.), 1.

2. A revision of the Paleozoic bryozoa. Part II. On genera and species of Trepostomata.

See Ulrich (E. O.) and Bassler (R. S.), 2.

3. Systematic paleontology of the Miocene deposits: Ostracoda.

See Ulrich (E. O.) and Bassler (R. S.), 3.

4. Systematic paleontology of the Miocene deposits: Bryozoa.

See Ulrich (E. O.) and Bassler (R. S.), 4.

B[ather] (F. A.).

1. The term Bradfordian.

Science, new ser., vol. 19, pp. 434–435, 1904.

Calls attention to the fact that the term Bradfordian has been used for European Mesozoic rocks.

Bauer (Max).

1. Jadeit und Chloromelanite in Form prähistorischer Artefakte aus Guatemala.

Centralbl. f. Min., Geol. u. Pal., pp. 65–79, 1 fig., 1904.

Describes the character and structure of jade and chloromelanite used by prehistoric people in Guatemala.

Bayley (William Shirley).

1. The Menominee iron-bearing district of Michigan.

U. S. Geol. Surv., Mon., vol 46, 513 pp., 43 pls., 54 figs., 1904.

Reviews the literature bearing on the subject, describes the physiography of the region, the character and occurrence of Archean, Algonkian and Paleozoic rocks, and the occurrence, character, and mining of the iron ores, and gives an outline of the geologic history.

2. Notes on the wells, springs, and general water resources of Maine.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 102, pp. 27–55, 1904.

Becke (F.).

1. Optische Orientirung des Albit von Amelia, Virginia.

   Tschermak's Min. u. Petrogr. Mitt., N. F., Bd. 19, pp. 321-335, 5 figs., 1900.
   Describes crystallographic features of an albite from Amelia, Virginia.

Becker (George F.).

1. Construction of geophysical laboratory.

   Carnegie Inst. of Wash., Yearb. no. 2, 1903, pp. 185-194, 1904.

2. Experiments on schistosity and slaty cleavage.

   U. S. Geol. Surv., Bull. no. 241, 34 pp., 7 pls., 1904.
   Describes experiments to determine the cause of cleavage and schistosity in rocks, and discusses the results obtained.

3. Present problems of geopnysics.

   Science, new ser., vol. 20, pp. 545-556, 1904; Eng. & Mg. Jour., vol. 78, pp. 743-744, 1904 (in part).

Beecher (Charles E.).

1. Note on a new Permian Xiphosuran from Kansas.

   Am. Jour. Sci., 4th ser., vol. 18, pp. 23-24, 1 fig., 1904.

Beede (J. W.) and **Rogers** (Austin F.).

1. Coal Measure faunal studies. III. Lower Coal Measures.

   Kans. Univ., Sci. Bull., vol. 2, pp. 459-473, 1904.
   Describes the character and occurrence of lower Coal Measures formations and gives lists of fossils obtained from them.

Beede (J. W.), **Prosser** (Charles S.) and.

1. Cottonwood Falls folio, Kansas.

   See Prosser (Charles S.) and Beede (J. W.), 1.

Bell (James Mackintosh).

1. Economic resources of Moose River Basin [Ontario].

   Ont. Bur. Mines, Rept., 1904, pt. 1, pp. 134-197, 21 pls., 1904.
   Includes observations on the occurrence, character, and geologic relations of pre-Cambrian, Paleozoic, and Pleistocene rocks and deposits, the physiographic features, and the economic resources.

Bell (Ralston).

1. How copper is produced.

   Mg. Rep., vol. 50, pp. 636-637, 662-663, 690-692, 1904.
   Includes notes upon the geologic occurrence of copper.

Bell (Robert).

1. Report on the geology of the basin of the Nottaway River.

   Can. Geol. Surv., Ann. Rept., new ser., vol. 13, 11 pp., 1 map, 1903. (Published separately, 1902.)
   Describes the character and occurrence of Laurentian and Huronian rocks in this region.

2. Volcanic origin of natural gas and petroleum.

   Can. Mg. Inst., Jour., vol. 6, pp. 126-128, 1904.

Bell (Robert N.).

1. The mining industry of Idaho.

   Ores & Metals, vol. 13, no. 15, pp. 22-32, ill., 1904.

   Gives a brief account of the general geology of the state, and the occurrence and production of ores by counties.

2. Geology of Park City, Utah, district.

   Lead & Zinc News, vol. 8, pp. 57, 60, 1904.

   Describes the general geology and the occurrence of lead-ore deposits.

Bendrat (T. A.).

1. The geology of Lincoln County, South Dakota, and adjacent portions.

   Am. Geol., vol. 33, pp. 65-94, 2 pls., 1904.

   Describes the topography and drainage, the character and occurrence of Algonkian and Cretaceous strata and glacial deposits.

Bergeat (Alfred).

1. Ein Rückblick auf die vulkanischen Ereignisse in Westindien im Mai 1902.

   Globus, Bd. 82, pp. 125-131, 1902.

   Reviews the volcanic eruptions in the West Indian Islands during 1902.

Berger (W. F. B.).

1. Bauxite in Arkansas.

   Eng. & Mg. Jour., vol. 77, pp. 606-607, 2 figs., 1904.

   Describes character and occurrence of bauxite, and the mining operations in Arkansas.

Berkey (Charles P.).

1. Mineral resources of the Uinta Mountains [Utah].

   Eng. & Mg. Jour., vol. 77, p. 841, 1904.

   Discusses the stratigraphy and geologic structure of the Uinta Mountains and their mineral resources.

2. A geological reconnaissance of the Uintah Reservation, southeastern Utah.

   Abstract: Science, new ser., vol. 19, p. 618, 1904.

   Describes stratigraphic succession in this region.

Berry (Edward W.).

1. Additions to the flora of the Matawan formation.

   Torrey Bot. Club, Bull., vol. 31, pp. 67-82, 5 pls., 1904.

2. The Cretaceous exposure near Cliffwood, N. J.

   Am. Geol., vol. 34, pp. 253-260, 1 pl., 1904.

   Discusses the correlation of the Cretaceous clays at Cliffwood, N. J., in the light of the evidence of the fossil plants. Gives a table showing the geologic distribution of the fossil species from the Matawan.

Beyer (S. W.).

1. Mineral production of Iowa in 1902.

   Iowa Geol. Surv., vol. 14, pp. 7-26, 1904.

Beyer (S. W.) and **Williams** (I. A.).

1. Technology of clays.

Iowa Geol. Surv., vol. 14, pp. 29–318, 7 pls., 30 figs., 1904.

Discusses the classification, origin, and properties of clays, and manufacture ot clay wares.

2. The geology of clays.

Iowa Geol. Surv., vol. 14, pp. 377–554, 22 pls., 41 figs., 1904.

Describes in detail the occurrence by counties of clays in Iowa, and their geologic horizons.

Bilgram, Hugo.

1. Inclusions in quartz.

Phila. Acad. Nat. Sci., vol. 55, p. 700, 1904.

Bishop (Irving P.).

1. Economic geology of western New York.

N. Y. State Mus., 56th Ann. Rept., pp. r42–r74, 2 pls., 1904.

Gives notes on the occurrence of economic products, particularly building stone, clays, salt, natural gas, and petroleum.

Blake (William P.).

1. Gypsum deposits in Arizona.

U. S. Geol. Surv., Bull. no. 223, pp. 100–101, 1904.

Describes character and occurrence of gypsum deposits in Arizona.

2. Superficial blackening and discoloration of rocks, especially in desert regions.

Am. Inst. Mg. Engrs., Trans. (Lake Superior meeting, September, 1904), 5 pp., 1904 [advance separate].

Describes surficial blackening of rocks and discusses its origin.

3. Copper ore and garnet in association.

Am. Inst. Mg. Engrs., Trans., vol. 34, pp. 886–890, 1904. Mg. & Sci. Press, vol. 89, pp. 72–73, 1904. Mg. World, vol. 21, p. 175, 1904.

Describes various occurrences of copper ore and garnet in association and discusses their origin.

4. Origin of pebble-covered plains in desert regions.

Am. Inst. Mg. Engrs., Trans., vol. 34, pp. 161–162, 1904.

See no. 85 of the Bibliography for 1903, U. S. Geol. Surv., Bull. no. 240.

5. Tombstone [Arizona] and its mines.

Am. Inst. Mg. Engrs., Trans., vol. 34, pp. 668–670, 1904.

See no. 87 of the Bibliography for 1903, U. S. Geol. Surv., Bull. no. 240.

6. Evidences of plication in the rocks of Cananea, Sonora [Arizona].

Am. Inst. Mg. Engrs., Trans. (Lake Superior meeting, September, 1904). Advance separate, 2 pp., 1904. Mg. Rep., vol. 50, pp. 586–587, 1904.

Blakemore (William).

1. Graham Island coal [British Columbia].

Eng. & Mg. Jour., vol. 78, p. 631, 1904.

Describes the occurrence of workable coal beds.

Blatchford (John).

1. The Bald Mountain district in the Black Hills. A description of the flat formation and some of the ore bodies found in connection with it.

Mines & Minerals, vol. 24, p. 394, 1904.
Describes the occurrence of gold ore deposits.

Blatchley (W. S.).

1. The petroleum industry in Indiana in 1903.

Ind., Dept. Geol. & Nat. Res., 28th Ann. Rept., pp. 79–209, 2 pls., 3 figs., 1904.
Describes the geologic occurrence of petroleum and natural gas, the geologic structure of the oil fields of Indiana, and in detail the production of and exploration for oil by counties.

2. The lime industry in Indiana.

Ind., Dept. Geol. & Nat. Res., 28th Ann. Rept., pp. 211–257, 4 pls., 2 figs., 1904.

Bleininger (Albert Victor).

1. The manufacture of hydraulic cements.

Ohio Geol. Surv., 4th ser., Bull. no. 3, 391 pp., 81 figs., 1904.
Includes a discussion of the occurrence and character of clays and other materials in Ohio suitable for the manufacture of cements.

Boehmer (Max).

1. Some practical suggestions concerning the genesis of ore deposits.

Am. Inst. Mg. Engrs., Trans., vol. 34, pp. 449–453, 1904.
See no. 94 of the Bibliography for 1903, U. S. Geol. Surv., Bull. no. 240.

Böggild (O. B.).

1. Samples of the sea-floor along the coast of east Greenland 74½–70 N. L.

Meddelelser om Grönland, vol. 28, pp. 17–95, 8 pls., 1904.
Describes the character and origin of the material deposited on the sea bottom east of Greenland.

Boright (Sherman H.).

1. Notes on the geology of the northern portion of the Boisdale Hills anticline [Cape Breton Island].

Can. Mg. Inst., Jour., vol. 6, pp. 411–434, ill., 1904.
Describes the location, geographic and topographic features, the general geology, and the character and occurrence of igneous rocks, and Cambrian and Carboniferous strata and economic resources of the region.

Böse (Emilio).

1. Informe sobre el origen probable de los temblores de Zanatepec á fines de septiembre de 1902, y sobre el estado actual del volcán de Tacaná.

México, Secretaría de Fomento, 2ª ép., año 3, no. 5, IV, pp. 59–79, 1903.
México, Inst. Geol., Par., t. 1, pp. 5–25, 4 pls., 1903.
Discusses the probable origin of the earthquakes of Zanatepec of September, 1902, and the present condition of the volcano of Tacaná.

Böse (Emilio)—Continued.

2. El área cubierta por la ceniza del volcán de Santa María, octubre 1902.

México, Secretaría de Fomento, Bol., 2ª ép., año 4, IV, pp. 73–78, 1904. México, Inst. Geol., Par., t. 1., pp. 51–54, 1 pl., 1904.

Describes the area covered by ashes ejected by the volcano of Santa Maria in October, 1902.

3. Sobre las regiones de temblores en México.

Soc. Cient. Ant. Alz., Mem. y Rev., t. 18, pp. 159–184, 1902.

Discusses regions in Mexico subject to earthquake movements.

Böse (E.) and **Angermann** (E.)

1. Informe sobre el temblor del 16 de enero de 1902 en el Estado de Guerrero [México].

México, Inst. Geol., Par., t. 1., pp. 125–131, 1904.

Describes an earthquake occurring in January, 1902, in Guerrero, Mexico.

Boutwell (J. M.).

1. Gypsum deposits in Utah.

U. S. Geol. Surv., Bull. no. 223, pp. 102–110, 1 pl., 1904.

Describes character, occurrence, economic development, and geologic relations of gypsum deposits in Utah.

2. Progress report on the Park City mining district, Utah.

U. S. Geol. Surv., Bull. no. 225, pp. 141–150, 1904.

Describes the character and occurrence of sedimentary, igneous, and metamorphic rocks in this area, the geologic structure, and the occurrence and mining of silver-lead ores.

3. Iron ores in the Uinta Mountains, Utah.

U. S. Geol. Surv., Bull. no. 225, pp. 221–228, 1904.

Describes the general geologic structure and stratigraphy of the region, and the occurrence and character of the iron-ore deposits.

4. Rock gypsum at Nephi, Utah.

U. S. Geol. Surv., Bull. no. 225, pp. 483–487, 1904.

Describes the character, occurrence, and development of rock gypsum near Nephi, Utah.

5. Notes on the wells, springs, and general water resources of New Hampshire.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 102, pp. 56–72, 1904.

Bowman (Isaiah).

1. A typical case of stream capture in Michigan.

Jour. Geol., vol. 12, pp. 326–334, 4 figs., 1904.

2. Deflection of the Mississippi.

Science, new ser., vol. 20, pp. 273–277, 3 figs., 1904.

Describes changes in the channel of the Mississippi and discusses their cause.

Boyer (C. S.).

1. Systematic paleontology of the Miocene deposits of Maryland: Thallophyta-Diatomaceæ.

Md. Geol. Surv., Miocene, pp. 487–507, 3 pls., 1904.

Bradford (William).

1. Gold deposition by drainage.

   Eng. & Mg. Jour., vol. 78, pp. 554–555, 8 figs., 1904.
   Discusses the origin of gold ores.

Branner (J. C.).

1. Memoir of James E. Mills.

   Geol. Soc. Am., Bull., vol. 14, pp. 512–517, pl. 65 (por.), 1904.
   Includes a list of papers written by the subject of the memoir.

Breger (C. L.), **Kindle** (Edward M.) and.

1. Paleontology of the Niagara of northern Indiana.

   See Kindle (Edward M.) and Breger (C. L.), 1.

Brent (Charles).

1. Notes on the gold ores of western Ontario.

   Can. Mg. Inst., Jour., vol. 6, pp. 327–335, 1904.
   See no. 124 of U. S. Geol. Surv., Bull. no. 240.

Brewer (W. M.).

1. Mineral resources of Vancouver Island.

   Can. Mg. Inst., Jour., vol. 6, pp. 188–199, 1904.
   Describes the general geology and the occurrence and character of ore bodies, mainly gold, copper-gold, and magnetite.

2. White Horse copper camp, Yukon Territory.

   Mg. & Sci. Press, vol. 89, pp. 308–309, 1 fig., 1904.
   Describes the location, general geology, and occurrence of the copper ores.

Brezina (Aristides).

1. The arrangement of collections of meteorites.

   Am. Phil. Soc., Proc., vol. 43, pp. 211–247, 7 pls., 1904.

Brezina (Aristides) and **Cohen** (Emil).

1. Ueber Meteoreisen von De Sotoville [Alabama].

   K. Akad. d. Wiss. in Wien, math.-naturw. Klasse, Bd. 113, Abt. 1, pp. 89–103, 3 figs., 1904.
   Describes occurrence, characters, and composition.

Broadhead (Garland C.).

1. Bitumen and oil rocks.

   Am. Geol., vol. 33, pp. 27–35, 1904.
   A general account of the occurrence of bituminous rocks and the origin and utilization of bituminous products.

2. The loess.

   Am. Geol., vol. 33, pp. 393–394, 1904.
   Describes distribution and character of the loess along the Missouri River and discusses its origin.

3. Surface deposits of western Missouri and Kansas.

   Am. Geol., vol. 34, pp. 66–67, 1904.
   Describes the distribution of flint gravels in Missouri and Kansas.

Broadhead (Garland C.)—Continued.

4. The saccharoidal sandstone.

Am. Geol., vol. 34, pp. 105–110, 1904.
Describes the occurrence and character of the saccharoidal sandstone in Missouri.

Brock (R. W.).

1. Original native gold in igneous rocks.

Eng. & Mg. Jour., vol. 77, p. 511, 1904.
Describes occurrences of native gold in igneous rocks of British Columbia.

2. Poplar Creek and other camps of the Lardeau district [British Columbia].

Can. Mg. Inst., Jour., vol. 7. Advance separate, 27 pp., 10 figs., 1904.
Gives a general account of the geology of the district and describes the occurrence of gold-ore deposits.

3. Platinum in British Columbia.

Eng. & Mg. Jour., vol. 77, pp. 280–281, 1904.
Describes the occurrence, character, and geological relations of ore deposits of British Columbia in which platinum occurs.

Brock (R. W.), **McConnell** (R. G.) and.

1. Report on the great landslide at Frank, Alberta.

See McConnell (R. G.) and Brock (R. W.), 1.

Broili (Ferdinand).

1. Permische Stegocephalen und Reptilien aus Texas.

Palæontographica, vol. 51, pp. 1–120, 13 pls., 5 figs., 1904.
Gives systematic descriptions and discusses the relationships and classification of Stegocephala and reptiles from the Permian of Texas.

2. Ueber Diacranodus texensis Cope (Didymodus? compressus Cope).

N. Jahrb. f. Min., Beilage-Band 19, pp. 467–484, 2 pls., 1904.

3. Pelycosaurierreste von Texas.

Deutsch. geol. Ges., Zeitschr., Bd. 56, pp. 268——, 1 pl. and 1 fig., 1904.
Describes remains of Pelycosaurians from the Permian of Texas.

Brooks (Alfred H.).

1. Placer mining in Alaska in 1903.

U. S. Geol. Surv., Bull. no 225, pp. 43–59, 1904.
Describes occurrence of gold and the mining developments.

2. The investigation of Alaska's mineral wealth.

Am. Inst. Mg. Engrs., Trans. (Lake Superior meeting, September, 1904), 20 pp., 1 fig., 1904.

Brown (Barnum).

1. Stomach stones and food of plesiosaurs.

Science, new ser., vol. 20, pp. 184–185, 1904.
Gives observations upon the occurrence of "stomach stones" in connection with the remains of plesiosaurs and their probable use by the animal.

Bryan (William Alanson).

1. A monograph of Marcus Island.

Bishop Mus., Honolulu, Occasional Papers, vol. 2, no. 1, pp. 77–139, 8 figs., 1904.

Includes an account of the physical features, and the general geology and mode of formation of the island.

Buckley (Ernest Robertson).

1. Biennial report of the state geologist [of Missouri].

Mo. Bur. Geol. & Mines, 83 pp., 8 pls., 1903.

Administrative report for the year 1902. Includes an outline of the mineral resources of the state and an index to the publications of the Missouri Geological Survey.

2. Introduction [to the geology of Miller County, Missouri].

Mo. Bur. Geol. & Mines, 2d ser., vol. 1, pp. xi–xvi, 1903.

Discusses the stratigraphy, correlation, etc., of geologic formations in Miller County, Missouri.

3. A system of keeping the records of a state geological survey.

Abstract: Science, new ser., vol. 19, p. 527, 1904.

Buckley (E. R.), **Ball** (S. H.), and **Smith** (A. F.).

1. Glacial boulders along the Osage River in Missouri.

Abstract: Geol. Soc. Am., Bull., vol. 14, p. 553, 1904.

Buckley (E. R.) and **Buehler** (H. A.).

1. The quarrying industry of Missouri.

Mo. Bur. Geol. & Mines, 2d ser., vol. 2, 371 pp., 59 pls., 1904.

Gives an account of investigations upon the occurrence, geologic relations, qualities, and utilization of the building stones of Missouri. Includes a brief geological history of Missouri.

Buehler (H. A.), **Buckley** (E. R.) and.

1. The quarrying industry of Missouri.

See Buckley (E. R.) and Buehler (H. A.), 1.

Burchard (Ernest F.).

1. Lignites of the middle and upper Missouri Valley.

U. S. Geol. Surv., Bull. no. 225, pp. 276–288, 1904.

Describes prospecting for coal in northeastern Nebraska, the character and occurrence of lignite seams and the character of the lignite; also the occurrence and character of the lignite of North Dakota.

2. Geology of Dakota County, Nebraska, with special reference to the lignite deposits.

Sioux City Acad. Sci. and Letters, vol. 1, pp. 135–184, 8 figs., 1904.

Describes the physiography and drainage features, the character and occurrence of Cretaceous and Quaternary deposits, the geologic history, the economic resources, and the occurrence and character of lignite not of workable quality.

Bureau (Ed.).

1. Sur une collection de végétaux fossiles des Etats-Unis.

   Mus. d'Hist. Nat., Paris, Bull., t. 9, pp. 250–251, 1903.

   Gives a brief account of a collection of fossil Cretaceous plants from Kansas and Colorado.

Burns (David).

1. On the phenomena accompanying the volcanic eruptions in the West Indies.

   Brit. Assoc. Adv. Sci., Rept. 73d meeting, pp. 567–568, 1904.

Burrows (John Shober).

1. The Barnesboro-Patton field of central Pennsylvania.

   U. S. Geol. Surv., Bull. no. 225, pp. 295–310, 1904.

   Describes location and stratigraphy of the field, the character and occurrence of the coal seams, composition and value of the coal, and the mining developments.

Butts (Charles).

1. Coal mining along the southeastern margin of the Wilmore basin, Cambria County, Pa.

   U. S. Geol. Surv., Bull. no. 225, pp. 325–329, 1904.

   Describes the location and geologic structure of the field and the mining operations.

2. Kittanning folio, Pennsylvania.

   U. S. Geol. Surv., Geol. Atlas of U. S., folio no. 115, 1904.

   Describes physiographic features, the character, occurrence, and relations of Carboniferous strata and particularly of the coal beds, the geologic structure and geologic and geographic history, and the economic resources, mainly coal, petroleum, and natural gas. The section on glacial gravels is contributed by Frank Leverett.

Byrne (John).

1. Geography, history, production, fissure systems, distribution of ores, character of ores [of the Butte, Montana, mining district].

   Mont. Inspector of Mines, 14th Ann. Rept., pp. 26–33 [1903].

   Includes a brief account of the general geology of the vicinity of Butte, Montana, of the fissures and veins, and the occurrence of the ore deposits of silver and copper ores.

C.

Caballero (Gustavo de J.).

1. El vanadio de Charcas, E. de San Luís Potosí, México.

   Soc. Cient. Ant. Alz., Mem. y Rev., t. 20, pp. 87–98, 1903.

   Describes the occurrence and character of deposits containing vanadium in the state of San Luis Potosi, Mexico.

Cahill (Edward G.).

1. The method used in working the silver-lead mines of Santa Eulalia, Chihuahua, Mexico.

   Cal. Jour. Techn., vol. 3, pp. 145–149, 1 pl., 1904.

   Gives notes on the occurrence and geologic relations of the silver-lead ore deposits.

Calkins (Frank C.), **Smith** (George Otis) and.

1. A geological reconnaissance across the Cascade Range near the Forty-ninth Parallel.

See Smith (George Otis) and Calkins (Frank C.), 1.

Calvin (Samuel).

1. Twelfth annual report of the State geologist [Iowa].

Iowa Geol. Surv., vol. 14, pp. 1–6, 3 pls. (maps), 1904.

Campbell (Marius R.).

1. Conglomerate dikes in southern Arizona.

Am. Geol., vol. 33, pp. 135–138, 2 pls., 1904.

Describes the general geologic structure of the region, the occurrence and character of the dike, and the source of its material.

2. The Deer Creek coal field, Arizona.

U. S. Geol. Surv., Bull. no. 225, pp. 240–258, 1 fig., 1904.

Describes location, stratigraphy, and geologic structure of the field, the character and occurrence of coal seams, and the composition and value of the coal.

3. The Meadow Branch coal field of West Virginia.

U. S. Geol. Surv., Bull. no. 225, pp. 330–344, 1 fig., 1904.

Describes location of the field, the stratigraphy and geologic structure, the character and occurrence of the coal beds, the quality of the coal and the mining developments. Includes a short report by David White on the fossil plants.

4. Latrobe folio, Pennsylvania.

U. S. Geol. Surv., Geol. Atlas of U. S., folio no. 110, 1904.

Describes physiographic features, the general geologic structure and history of the area, the character and occurrence of Devonian and Carboniferous strata and Quaternary deposits, and the mineral resources, chiefly coal.

5. Glacial erosion in the Finger Lake region, New York.

Abstract: Science, new ser., vol. 19, pp. 531–532, 1904.

Discusses the origin of the present physiographic features of this region.

Capilla (Alberto).

1. Los yacimientos de fierro de "Tatatila," Cantón de Jalapa, E. de Vera Cruz [México].

Secretaría de Fomento [México], Bol., 2 ^{a} época, año 3, no. 10, II, pp. 535–542, 1904; Soc. Cient. Ant. Alz., Mem. y Rev., t. 19, pp. 341–346, 1904.

Describes the character and occurrence of iron-ore deposits in the state of Vera Cruz, Mexico.

Capps (S. R.) and **Leffingwell** (E. D. K.).

1. Pleistocene geology of the Sawatch Range, near Leadville, Colo.

Jour. Geol., vol. 12, pp. 698–706, 2 figs., 1904.

Discusses the extent in this region of the ice during the Glacial epoch, and describes the drift deposits, terraces, and drainage changes.

Carlyle (E. J.).

1. The Pioneer iron mine, Ely, Minn.

Can. Mg. Inst., Jour., vol. 7. Advance separate, 33 pp., 25 figs., 1904.

Includes some account of the general geology of the region, and of the character, occurrence, and geologic relations of the iron-ore deposits.

Carnew (Frank).

1. Direction of pre-Glacial stream flow in central New York.

Am. Geol., vol. 33, pp. 196–198, 1904.

Discusses criticisms of Professor Fairchild upon the writer's paper, "A type case in diversion of drainage."

Carpenter (Franklin R.).

1. The new geology and vein formation.

Colo. Sci. Soc., Proc., vol. 7, pp. 253–266, 1904.

Discusses ore formation from the standpoint of the planetesimal hypothesis.

2. Vein formation and the new geology.

Eng. & Mg. Jour., vol. 77, p. 312, 1904.

Carter (Oscar C. S.).

1. The petrified forests and Painted Desert of Arizona.

Franklin Inst., Jour., vol. 157, pp. 293–311, 11 figs., 1904.

Gives observations upon the physiography and geology of the region.

Carter (W. E. H.).

1. The mines of Ontario.

Can. Mg. Inst., Jour., vol. 7. Advance separate, 54 pp., 1904.

Includes observations on the occurrence in Ontario of deposits of gold, silver, copper, nickel, iron, lead, and zinc ores, corundum, graphite, mica, and other minerals.

Case (E. C.).

1. On some vertebrate fossils from the Permian beds of Oklahoma.

Okla., Dept. Geol. & Nat. Hist., 2d Bien. Rept., pp. 62–68, 1902.

2. The osteology of the skull of the pelycosaurian genus, Dimetrodon.

Jour. Geol., vol. 12, pp. 304–311, 6 figs., 1904.

3. On the structure of the fore foot of Dimetrodon.

Jour. Geol., vol. 12, pp. 312–315, 3 figs., 1904.

4. Systematic paleontology of the Miocene deposits of Maryland: Mammalia, Aves, Reptilia.

Md. Geol. Surv., Miocene, pp. 3–70, 18 pls., 1904.

5. A remarkably preserved specimen of a pelycosaur collected during the last summer in Texas.

Abstract: Science, new ser., vol. 19, p. 253, 1904.

Casey (Thomas L.).

1. Notes on the Pleurotomidæ, with description of some new genera and species.

St. Louis Acad. Sci., Trans., vol. 14, pp. 123–170, 1904.

2. On the probable age of the Alabama white limestone.

Phila. Acad. Nat. Sci., Proc., vol. 53, pp. 513–518, 1902.

Discusses the geologic age and relations of the Alabama white limestone, Jackson and Vicksburg stages and other Tertiary formations in the light of evidence of their fossils.

Catlett (Charles).

1. Cement resources of the Valley of Virginia.

U. S. Geol. Surv., Bull. no. 225, pp. 457–461, 1904.
Describes location, geologic relations, and character of the raw materials.

2. Geological relations of the manganese ore deposits of Georgia. [In discussion of paper of Thomas L. Watson.]

Am. Inst. Mg. Engrs., Trans., vol. 34, pp. 968–969, 1904.
See no. 179 of the Bibliography for 1903, U. S. Geol. Surv., Bull. no. 240.

Chalmers (R.).

1. The geomorphic origin and development of the raised shore lines of the St. Lawrence Valley and Great Lakes.

Am. Jour. Sci., 4th ser., vol. 18, pp. 175–179, 1904.
Describes high-level shore lines and discusses their origin and geologic history.

2. Peat in Canada.

Can. Geol. Surv., Min. Res. of Can., Bull. on Peat, 40 pp., 1904.
Discusses the occurrence and utilization of peat in Canada. Includes notes upon the geology and physical features of peat bogs.

Chamberlin (T. C.).

1. [The geological survey of the Lake Superior region.]

Jour. Geol., vol. 12, pp. 276–277, 1904.
Reviews the work and publications of the U. S. Geological Survey upon the Lake Superior ore-bearing series.

2. Fundamental problems of geology.

Carnegie Inst. of Wash., Yearb. no. 2, 1903, pp. 261–270, 1904.
Discusses lines of research upon fundamental problems of geology.

3. A contribution to the theory of glacial motion.

Chicago Univ., Decennial Publications, 1st ser., vol. 9, pp. 193–206, 3 pls., 3 figs., 1904.

4. Origin of ocean basins on the planetesimal hypothesis.

Abstract: Geol. Soc. Am., Bull., vol. 14, p. 548, 1904.
See no. 184 of U. S. Geol. Surv., Bull. no. 240.

Chamberlin (Thomas C.) and **Salisbury** (Rollin D.).

1. Geology. In two volumes. Vol. 1. Geologic processes and their results.

New York, Henry Holt and Company, 1904. xix, 654 pp., 24 pls. and 471 figs.

Chazal (Philip E.).

1. The century in phosphates and fertilizers. A sketch of the South Carolina phosphate industry.

Charleston, S. C., 71 pp., 1904.
Includes an account of the occurrence, geologic relations, character, origin, and economic development of the phosphate deposits of South Carolina.

Cirkel (Fritz).

1. Mica deposits.

Can. Mg. Rev., vol. 23, pp. 82–86, 104–108, 128–133, 13 figs., 1904.
Describes the occurrence and character of mica and phlogopite deposits in Canada and elsewhere and their economic development in Canada.

Clapp (Frederick G.).

1. Relations of gravel deposits in the northern part of Glacial Lake Charles, Massachusetts.

Jour. Geol., vol. 12, pp. 198–214, 3 figs., 1904.

Describes sand plains, gravel, and other Glacial deposits in the valley of the Charles River in Massachusetts, and discusses their characteristics and formations, the disappearance of the Glacial ice and connected events.

Clapp (Frederick G.), **Fuller** (Myron L.) and.

1. Patoka folio, Indiana-Illinois.

See Fuller (Myron L.) and Clapp (Frederick G.), 1.

Clark (William Bullock).

1. The Matawan formation of Maryland, Delaware, and New Jersey, and its relations to overlying and underlying formations.

Am. Jour. Sci., 4th ser., vol. 18, pp. 435–440, 1904. Johns Hopkins Univ. Circ., 1904, pp. 692–699 (no. 7, pp. 28–35), 1904.

Includes a table showing correlation of Atlantic coast Cretaceous formations with Cretaceous formations of Europe.

2. The Miocene deposits of Maryland. Introduction and general stratigraphic relations.

Md. Geol. Surv., Miocene, pp. xxiii–xxxii, 1 pl., 1904.

3. Systematic paleontology of the Miocene deposits of Maryland: Echinodermata.

Md. Geol. Surv., Miocene, pp. 430–433, 2 pls., 1904.

Clarke (F. W.).

1. Analyses of rocks from the laboratory of the United States Geological Survey.

U. S. Geol. Surv., Bull. no. 228, 375 pp., 1904.

NOTE.—The analyses of rocks have not been listed in the index of this bibliography.

Clarke (John M.).

1. Charles Emerson Beecher. Oct. 9; 1856–Feb. 14, 1904.

Am. Geol., vol. 34, pp. 1–13, 1 pl. (por.), 1904.

Includes a chronologic list of Beecher's published papers, prepared by Lucy P. Bush.

Clarke (John M.) and **Luther** (D. Dana).

1. Stratigraphic and paleontologic map of Canandaigua and Naples quadrangles [New York].

N. Y. State Mus., Bull. 63, 76 pp., geol. map, 1904.

Describes in detail the occurrence, and the lithologic and faunal characters of the Silurian and Devonian formations included in the area of the map, and gives lists of the fossils of the several formations.

Clearman (Harriet M.).

1. A geological situation in the lava flow, with reference to the vegetation.

Iowa Acad. Sci., Proc. for 1903, vol. 11, pp. 65–68, 1904.

Includes observations upon the lava beds of Idaho.

Clements (J. Morgan).

1. Spherulitic texture in the Archean greenstones of Minnesota.

   Abstract: Geol. Soc. Am., Bull., vol. 14, p. 555, 1904.

2. Geological history of the Vermilion iron-bearing district of Minnesota.

   Abstract: Geol. Soc. Am., Bull., vol. 14, p. 555, 1904.

Cohen (E.).

1. Die Meteoreisen von Ranchito und Casas Grandes [Mexico].

   Mittheilungen des Naturwissenschaftlichen Vereins für Neu-Vorpommern und Rügen zu Greifswald, Jahrg. 35, 13 pp., 1903.

   Describes occurrence, characters, and composition of meteorites from Mexico.

2. Die Meteoreisen von Nenntmannsdorf und Persimmon Creek; Unterscheidung von Cohenit und Schreibersit.

   Mittheilungen des Naturwissenschaftlichen Vereins für Neu-Vorpommern und Rügen zu Greifswald, Jahrg. 35, 4 pp., 1903.

   Describes occurrence and characters of a meteorite found in North Carolina.

3. Das Meteoreisen von Millers Run bei Pittsburgh, Alleghany Co., Pennsylvania, Vereinigte Staaten.

   Mittheilungen des Naturwissenschaftlichen Vereins für Neu-Vorpommern und Rügen zu Greifswald, Jahrg. 35, 4 pp., 1903.

   Describes occurrence and characters of a meteorite from Pennsylvania.

4. Ueber die Meteoreisen von Cuernavaca und Iredell.

   Mittheilungen des Naturwissenschaftlichen Vereins für Neu-Vorpommern und Rügen zu Greifswald, Jahrg. 34, 5 pp., 1902.

   Describes occurrence, characters, and composition of meteorites from Mexico and Texas.

5. Meteoreisen-Studien. XI.

   K. k. naturh. Hofmuseums, Ann., Bd. 15, pp. 351–391, 1900.

   Describes meteorites from Illinois Gulch, Mont.; Hammond, Wis.; Cacaria, Mex.; Mesquital, Mex.; Murphy, N. C.; Saint Francois County, Mo.; Cosby's Creek, Tenn.; Canyon Diablo, Ariz.; Kendall County, Tex.; and Mount Joy, Pa.

Colburn (E. A.).

1. A peculiar ore deposit.

   Mg. & Sci. Press, vol. 88, p. 196, 1904.

   Describes the occurrence, character, and geologic relations of ore bodies.

Cole (A. D.).

1. Clarence L. Herrick.

   Science, new ser., vol. 20, pp. 600–601, 1904.

Coleman (A. P.).

1. Iroquois beach in Ontario.

   Geol. Soc. Am., Bull., vol. 15, pp. 347–368, 1 pl. (map), 1904.

   Describes location and character of the beach in Ontario of Lake Iroquois and discusses the levels and tilting of the beach, the outlet of the lake, and its geological and time relationships.

Coleman (A. P.)—Continued.

2. The Iroquois beach in Ontario.

Ont. Bur. Mines, Rept., 1904, pt. 1, pp. 225–244, 1904.

3. The northern nickel range [Ontario].

Ont. Bur. Mines, Rept., 1904, pt. 1, pp. 192–222, 5 pls., 1904.

Describes the topography, general geology, and the occurrence, character, and geological relations of nickel and iron ore deposits.

4. The Sudbury nickel-bearing eruptive.

Abstract: Geol. Soc. Am., Bull., vol. 15, p. 551, 1904; Science, new ser., vol. 19, p. 526, 1904; Sci. Am. Suppl., vol. 57, p. 23446, 1904; Eng. & Mg. Jour., vol. 77, p. 73, 1904.

Collier (Arthur J.).

1. Tin deposits of the York region, Alaska.

U. S. Geol. Surv., Bull. no. 225, pp. 154–167, 1 fig., 1904.

Describes the general geology of the York region, and the occurrence and character of stream and lode tin deposits.

2. The tin deposits of the York region, Alaska.

U. S. Geol. Surv., Bull. no. 229, 61 pp., 6 pls., 5 figs., 1904.

Describes the general geology, the character and occurrence of sedimentary rocks of Silurian age and igneous rocks, and the character and occurrence in detail of tin-ore deposits and the mining operations. Gives a résumé of the occurrence of tin in the United States and other parts of the world.

3. The coal fields of Cape Lisburne, Alaska.

Am. Geol., vol. 34, pp. 401–402, 1904.

Gives a brief account of the situation and geologic age of the coal fields, and the occurrence and character of the coal beds.

Collins (Henry F.).

1. Notes on the wollastonite rock mass, and its associated minerals of the Santa Fe mine, State of Chiapas, Mexico.

Mineral. Mag., vol. 13, pp. 356–362, 1904.

Describes occurrence, origin, and crystallographic features of a rock mass of wollastonite.

Comstock (Frank M.).

1. Ancient lake beaches on the islands in Georgian Bay.

Am. Geol., vol. 33, pp. 312–318, 2 pls., 1 fig., 1904.

Describes the occurrence and character of elevated beaches.

Comstock (Theo. B.).

1. Superficial blackening and discoloration of rocks, especially in desert regions.

Am. Inst. Mg. Engrs., Trans. (Lake Superior meeting, September, 1904), 4 pp., 1904. (Advance separate.)

Discusses the occurrence of these features and their explanation.

Condra (G. E.).

1. Stratigraphic delineation of the Benton and Niobrara formations of Nebraska.

Abstract: Science, new ser., vol. 19, p. 925, 1904.

Cook (Alfred N.).

1. A new deposit of fuller's earth.

   Iowa Acad. Sci., Proc. for 1903, vol. 11, pp. 135–137, 1904.

   Describes the chemical composition of a specimen of fuller's earth from the Black Hills of South Dakota.

Cooper (W. F.).

1. Notes on the wells, springs, and general water resources of lower Michigan.

   U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 102, pp. 489–512, 1904.

Corkill (E. T.).

1. Notes on the occurrences, production, and uses of mica.

   Can. Mg. Inst., Jour., vol. 7. Advance separate, 23 pp., 6 figs., 1904.

   Describes the occurrence and mining of mica in India, the United States, and Canada, particularly the occurrence and geologic relations of deposits in Quebec and Ontario.

Corss (Frederic).

1. The buried valley of Wyoming [Pennsylvania].

   Wyoming Hist. & Geol. Soc., Proc. & Coll., vol. 8, pp. 42–44, 1904.

   Describes the position, formation, and filling of a pre-Glacial valley at Wyoming.

Coste (Eugene).

1. Volcanic origin of natural gas and petroleum.

   Can. Mg. Inst., Jour., vol. 6, pp. 73–123, 1904.

   Gives a full presentation of facts confirmatory of the theory of the volcanic origin of natural gas and petroleum.

2. The volcanic origin of oil.

   Am. Inst. Mg. Engrs., Trans. (Atlantic City meeting, February, 1904), 10 pp.

3. Volcanic origin of oil.

   Franklin Inst., Jour., vol. 157, pp. 443–454, 1904.

   Discusses volcanic origin of oil with particular reference to the Texas-Louisiana oil district.

Cowan (John L.).

1. The arsenic mines at Brinton, Virginia.

   Eng. & Mg. Jour., vol. 78, pp. 105–106, 2 figs., 1904.

   Describes the occurrence of arsenic ores at Brinton, Virginia, and their economic development.

Cragin (F. W.).

1. A study of some teleosts from the Russell substage of the Platte Cretaceous series.

   Colo. Coll. Studies, vol. 9, pp. 25–37, 3 pls., 1901.

Crane (W. R.), **Adams** (George I.), **Haworth** (Erasmus), and.

1. Economic geology of the Iola quadrangle, Kansas.

   See Adams (George I.), Haworth (Erasmus), and Crane (W. R.), 1.

Crook (A. R.).

1. Missouri lead and zinc regions visited by the Geological Society of America.

Science, new ser., vol. 19, pp. 197–198, 1904.
Describes the occurrence of ore deposits.

2. Molybdenite at Crown Point, Washington.

Geol. Soc. Am., Bull., vol. 15, pp. 283–288, 2 pls., 1904.
Describes the occurrence, relations to surrounding rocks, and character of molybdenite ore at Crown Point, Washington.

Crosby (W. O.).

1. Memoir of Alpheus Hyatt.

Geol. Soc. Am., Bull., vol. 14, pp. 504–512, pl. 64 (por.), 1904.
Includes a list of papers published by the subject of the memoir.

2. Structure and composition of the delta plains formed during the Clinton stage in the Glacial lake of the Nashua Valley. [Continuation.]

Tech. Quart., vol. 17, pp. 37–75, 3 pls., 17 figs., 1904.
Describes the structure and process of building of Glacial delta plains and the character and occurrence of various Glacial deposits, and discusses their origin.
For previous part of the paper, see no. 249 of U. S. Geol. Surv., Bull. no. 240.

3. Geology of the Weston aqueduct of the Metropolitan waterworks in Southboro, Framingham, Wayland, and Weston, Massachusetts.

Tech. Quart., vol. 17, pp. 101–116, 1 fig., 1904.
Describes the character and occurrence of the rocks in the tunnels of the Weston aqueduct and discusses their geologic relations and their age.

4. Notes on the wells, springs, and general water resources of Rhode Island.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 102, pp. 119–125, 1904.

Crosby (W. O.) and **La Forge** (Lawrence).

1. Notes on the wells, springs, and general water resources of Massachusetts.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 102, pp. 94–117, 1904.

Crosby (W. O.) and **Loughlin** (G. F.).

1. A descriptive catalogue of the building stones of Boston and vicinity.

Tech. Quart., vol. 17, pp. 165–185, 1904.
Describes the geologic and geographic occurrence, character, and use in Boston of various building stones.

Cross (Charles Mortimer).

1. The underground water circulation.

Ores and Metals, vol. 13, no. 15, pp. 21, 37–38, no. 16, p. 22, 1904.
Discusses ore deposition by circulating waters.

Cross (Whitman).

1. A new Devonian formation in Colorado.

Am. Jour. Sci., 4th ser., vol. 18, pp. 245–252, 1904.

Describes character, occurrence, and geologic relations of Devonian strata in the San Juan region of Colorado.

2. An occurrence of trachyte on the Island of Hawaii.

Jour. Geol., vol. 12, pp. 510–523, 1 fig., 1904.

Describes the occurrence and character of a trachyte rock from the Island of Hawaii, gives chemical analyses of this and allied rocks and its norm, and discusses its bearing upon the geologic history of the island, and the general significance of the occurrence.

Culbert (M. T.).

1. The iron belt west of Hutton [Ontario].

Ont. Bur. Mines, Rept., 1904, pt. 1, pp. 222–224, 4 pls., 1904.

Gives observations upon the geology of the region traversed and the occurrence of iron ores.

Cumings (Edgar Roscoe).

1. Development of some Paleozoic bryozoa.

Am. Jour. Sci., 4th ser., vol. 17, pp. 49–78, figs. 1–83, 1904.

Describes development stages in recent bryozoa and in the fossil genera Fenestella, Unitrypa, and Polypora.

Cumings (Edgar R.), **Prosser** (Charles S.) and.

1. The Waverly formations of central Ohio.

See Prosser (Charles S.) and Cumings (Edgar R.), 1.

Curtis (George Carroll).

1. Evidence of recent differential movement along the New England coast.

Abstract: Science, new ser., vol. 19, pp. 522–523, 1904.

Cushing (H. P.).

1. Memoir of Peter Neff.

Geol. Soc. Am., Bull., vol. 15, pp. 541–544, 1 pl. (port.), 1904.

Cushman (Joseph A.).

1. A new footprint from the Connecticut Valley.

Am. Geol., vol. 33, pp. 154–156, 1 pl., 1904.

2. Pleistocene foraminifera from Panama.

Am. Geol., vol. 33, pp. 265–266, 1904.

Describes occurrence and gives a list of species identified, with notes as to the occurrence of living forms of the same species.

3. Notes on the Pleistocene fauna of Sankaty Head, Nantucket, Mass.

Am. Geol., vol. 34, pp. 169–174, 1904.

Gives a section of the strata and a table showing the occurrence of the fossils in the various beds, and discusses the relations of these faunas.

4. Miocene barnacles from Gay Head, Mass., with notes on Balanus proteus, Conrad.

Am. Geol., vol. 34, pp. 293–296, 3 figs., 1904.

D.

Dale (T. Nelson).

1. The geology of the north end of the Taconic Range.

Am. Jour. Sci., 4th ser., vol. 17, pp. 185–190, 1 pl. (map), 1904.

Describes the areal distribution and structural relations of Cambrian and Ordovician formations in the area and gives an explanation of these facts.

2. Note on Arkansas roofing slates.

U. S. Geol. Surv., Bull. no. 225, pp. 414–416, 1904.

Describes the occurrence and megascopic and microscopic characters.

3. Geology of the Hudson Valley between the Hoosic and the Kinderhook.

U. S. Geol. Surv., Bull. no. 242, 63 pp., 3 pls., and 17 figs., 1904.

Describes the occurrence, general and petrographical characters, and geologic structure and relations of lower Cambrian, Ordovician, and Silurian strata, and the general geologic structure and history of this region.

4. Note on the geological relations of the Brandon lignite deposit.

Vt. Geol. Surv., Rept. State Geol., IV, pp. 163–165, 1 fig., 1904.

Dall (William Healey).

1. Neozoic invertebrate fossils. A report on collections made by the [Harriman Alaska] expedition.

Harriman Alaska Expedition, vol. 4, pp. 99–122, 2 pls., 1904.

Gives systematic descriptions of Eocene fossils from Alaska Peninsula and of Miocene fossils from the Shumagin Islands, and a list of Pleistocene fossils from Douglas Island, and describes the localities from which fossils were obtained.

2. On the geology of the Hawaiian Islands.

Am. Jour. Sci., 4th ser., vol. 17, p. 177, 1904.

A note in regard to the explanation of certain geologic formations on the Island of Oahu.

3. A singular Eocene Turbinella.

Nautilus, vol. 18, pp. 9–10, 1904.

4. An historical and systematic review of the frog shells and tritons.

Smith. Misc. Coll., vol. 47 (Quart. Issue, vol. 2, no. 1), pp. 114–144, 1904.

Includes observations on Tertiary forms.

5. The relations of the Miocene of Maryland to that of other regions and to the recent fauna.

Md. Geol. Surv., Miocene, pp. cxxxix–clv, 1904. Abstract: Science, new ser., vol. 19, pp. 502–503, 1904.

6. On the true nature of Tamiosoma.

Science, new ser., vol. 15, pp. 5–7, 1902.

Darton (N. H.).

1. Newcastle folio, Wyoming-South Dakota.

U. S. Geol. Surv., Geol. Atlas of U. S., folio no. 107, 1904.

Describes physiographic features, the geologic history and structure, the occurrence, character, and stratigraphic relations of Carboniferous, Triassic (?), Jurassic, and Cretaceous strata and Quaternary deposits, and the economic resources, artesian water, coal, petroleum, gypsum, etc.

Darton (N. H.)—Continued.

2. Gypsum deposits in South Dakota.

U. S. Geol. Surv., Bull. no. 223, pp. 76–78, 1 pl., 2 figs, 1904.

Describes character, occurrence, and economic development of gypsum deposits in the Black Hills region.

3. Comparison of the stratigraphy of the Black Hills, Bighorn Mountains, and Rocky Mountain front range.

Geol. Soc. Am., Bull., vol. 15, pp. 379–448, 14 pls., 1904.

Describes in detail the occurrence, character, etc., of geologic formations of Cambrian, Ordovician, Carboniferous, Triassic, Jurassic, and Cretaceous age, and discusses their relations and correlations.

Darton (N. H.) and **Smith** (W. S. Tangier).

1. Edgemont folio, South Dakota-Nebraska.

U. S. Geol. Surv., Geol. Atlas of U. S., folio no. 108, 1904.

Describes the geography, topography, and drainage, the geologic history and structure of the area, the occurrence, character, and relations of Carboniferous, Triassic, Jurassic, Cretaceous, and Tertiary sedimentary strata, and the soils and water resources.

Davidson (George).

1. The glaciers of Alaska that are shown on Russian charts or mentioned in older narratives.

Geog. Soc. of Pac., Trans. & Proc., 2d ser., vol. 3, pp. 1–98, 11 pls. (maps), 1904.

Davis (R. O. E.).

1. Analysis of kunzite.

Am. Jour. Sci., 4th ser., vol. 18, p. 29, 1904.

Davis (W. M.).

1. The relations of the earth sciences in view of their progress in the nineteenth century.

Jour. Geol., vol. 12, pp. 669–687, 1904.

2. Fresh-water Tertiaries at Green River, Wyoming.

Abstract: Geol. Soc. Am., Bull., vol. 14, p. 544, 1904.
See no. 288 of U. S. Geol. Surv., Bull. no. 240.

3. Block mountains of the Basin Range province.

Abstract: Geol. Soc. Am., Bull., vol. 14, p. 551, 1904.
See no. 289 of U. S. Geol. Surv., Bull no. 240.

Day (Arthur L.).

1. The study of minerals in the laboratory.

Abstract: Science, new ser., vol. 19, pp. 733–734, 1904.

Describes experiments upon the melting-point determinations of feldspars.

Day (David T.).

1. Mineral resources of the United States. Calendar year 1902.

U. S. Geol. Surv., Min. Res. of U. S. for 1902, 1038 pp., 1904.

Contains:

Iron ores, by John Birkinbine, pp. 41-73.
Statistics of the American iron trade for 1902, by James M. Swank, pp. 75-99.
General statistics of iron and steel, iron ore, and coal, to the year 1901, inclusive, for five leading iron and steel producing countries, by James M. Swank, pp. 101-122.

Day (David T.)—Continued.

Gold and silver, by George E. Roberts, pp. 123-131.
Manganese ores, by John Birkinbine, pp. 133-161.
Copper, by Charles Kirchhoff, pp. 163-203.
Lead, by Charles Kirchhoff, pp. 205-216.
Zinc, by Charles Kirchhoff, pp. 217-229.
Aluminum and bauxite, by Joseph Struthers, pp. 231-238.
Platinum, by Joseph Struthers, pp. 239-243.
Platinum in the Rambler mine, Wyoming, by J. F. Kemp, pp. 244-250.
Quicksilver, by Joseph Struthers, pp. 231-238.
Lithium, by Joseph Hyde Pratt, pp. 259-261.
Nickel and cobalt, by Joseph Hyde Pratt, pp. 263-270.
Antimony, by Joseph Struthers, pp. 271-277.
Arsenic, by Joseph Struthers, pp. 279-282.
Bismuth, by Joseph Struthers, pp. 283-284.
Tungsten, molybdenum, uranium, and vanadium, by Joseph Hyde Pratt, pp. 285-288.
Coal, by Edward W. Parker, pp. 289-447.
Coke, by Edward W. Parker, pp. 449-515.
Gas, coke, tar, and ammonia at gas works, and in retort coke ovens, by Edward W. Parker, pp. 517-533.
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Phosphate rock, by Joseph Struthers, pp. 915-920.
Salt, by Joseph Struthers, pp. 921-932.
Sulphur and pyrite, by Joseph Struthers, pp. 933-943.
Barytes, by Joseph Hyde Pratt, pp. 945-948.
Mineral paints, by Joseph Struthers, pp. 949-962.
Asbestos, by Joseph Hyde Pratt, pp. 963-966.
Chromite, or chromic iron ore, by Joseph Hyde Pratt, pp. 967-969.
Flint and feldspar, by Heinrich Ries, pp. 971-973.
Graphite, by Joseph Struthers, pp. 975-982.
Magnesite, by Joseph Struthers, pp. 983-984.
Mica, by J. A. Holmes, pp. 985-991.
Mineral waters, pp. 993-1002.
Monazite, by Joseph Hyde Pratt, pp. 1003-1006.
Glass sand, by A. T. Coons, pp. 1007-1016.

2. Mineral resources of the United States. Calendar year 1903.

U. S. Geol. Surv., Min. Res. of U. S. for 1903, 1204 pp., 1904.

Contains:

Iron ores, by John Birkinbine, pp. 41-73.
Statistics of the American iron trade for 1903, by James M. Swank, pp. 75-127
Manganese ores, by John Birkinbine, pp. 129-156.
Gold and silver, pp. 157-199.
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Talc and soapstone, by Joseph Hyde Pratt, pp. 979-987.
Abrasive materials, by Joseph Hyde Pratt, pp. 989-1015.
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Mineral paints, by Joseph Hyde Pratt, pp. 1095-1110.
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Flint and feldspar, by Heinrich Ries, pp. 1117-1119.
Graphite, by Joseph Hyde Pratt, pp. 1121-1129.
Magnesite, by Charles G. Yale, pp. 1131-1135.
Mineral waters, pp. 1137-1162.
Monazite and zircon, by Joseph Hyde Pratt, pp. 1163-1170.
Glass sand, by A. T. Coons, pp. 1171-1178.

3. Gypsum deposits in Florida.

U. S. Geol. Surv., Bull. no. 223, p. 48, 1904.

Occurrence and character of a gypsum deposit near Panasoffkee, Florida.

Deckert (Emil).

1. Martinique und sein Vulkanismus.

Petermanns Mittheilungen, Band 48, pp. 133-136, 1 pl. (map), 1902.

Gives a description of Martinique and the volcanic eruption of Mont Pelé.

Demaret (Léon).

1. Les principaux gisements de minerais de zinc des États-Unis d'Amérique.

Revue universelle des Mines [Liége and Paris], 4e sér., t. 6, pp. 221-256, 6 pls., 1904.

Describes the principal deposits of zinc ore in the United States, including observations on the character, occurrence, geologic relations, origin, etc.

2. Les principaux gisements des minerais de mercure du monde.

Annales des Mines de Belgique, t. 9, 80 pp., 3 pls., 28 figs., 1904.

Gives an account of the deposits of quicksilver ores in the world, their occurrence, geologic relations, production, etc. In the United States deposits in California, Oregon, and Texas are considered.

Dern (George H.).

1. The geology of Mercur [Utah]. A history of the region. Description of the ores and their peculiar formations. How they were deposited.

Mines & Minerals, vol. 24, pp. 543-545, 3 figs., 1904.

Describes the general geology, the occurrence and character of the gold and silver ledges, and discusses the origin of the ores.

Dickson (Charles W.).

1. The ore deposits of Sudbury, Ontario.

Am. Inst. Mg. Engrs., Trans., vol. 34, pp. 3–67, 26 figs., 1904.
See no. 297 of the Bibliography for 1903, Bull. U. S. Geol. Surv., no. 240.

Diehl (O. C.).

1. Gypsum.

Mich. Miner, vol 6, no. 6, pp. 21–24, 1904.
Describes the occurrence of gypsum in Michigan and Utah.

Diller (J. S.).

1. Mining and mineral resources in the Redding Quadrangle, California, in 1903.

U. S. Geol. Surv., Bull. no. 225, pp. 169–179, 1904.
Describes the occurrence and character of deposits of gold, silver, copper, chromite, and iron ores.

2. The composition and structure of the Klamath Mountains.

Abstract: Science, new ser., vol. 19, p. 794, 1904.

Dominian (Leon).

1. Geology of Goldfield, Nevada.

Ores & Metals, vol. 13, no. 20, p. 25, 1904.
Describes briefly the geologic structure and history of the region, and discusses the genesis of the gold and silver ores.

2. The Goldfield district, Nevada.

Eng. & Mg. Jour., vol. 78, pp. 581–582, 1 fig., 1904.
Discusses the general geology, and the character and occurrence of veins containing gold-ore deposits.

Dominian (Leon), **Smith** (E. Percy) and.

1. Notes on a trip to White Oaks, New Mexico.

See Smith (E. Percy) and Dominian (Leon), 1.

Douglass (Earl).

1. The Neocene lake beds of western Montana and descriptions of some new vertebrates from the Loup Fork.

Mont. Univ., Missoula, Mont., 27 pp., 4 pls., 1899. (Published by the University.)

Dowling (D. B.).

1. Report on geological explorations in Athabaska, Saskatchewan, and Keewatin districts, including Moose Lake and the route from Cumberland Lake to the Churchill River, and the upper parts of Burntwood and Grass rivers.

Can. Geol. Surv., Ann. Rept., new ser., vol. 13, 44 pp., 2 pls., and map, 1903. (Published separately, 1902.)
Gives observations upon the occurrence and character of Laurentian, Huronian, Cambro-Silurian, Silurian, and Pleistocene deposits and the economic resources, and upon physiographic and geologic features of the region examined.

Drake (N. F.), **Lindgren** (Waldemar) and.

1. Nampa folio, Idaho-Oregon.

   See Lindgren (Waldemar) and Drake (N. F.), 1.

2. Silver City folio, Idaho.

   See Lindgren (Waldemar) and Drake (N. F.), 2.

Draper (Marshall D.).

1. The district of Goldfield, Nevada.

   Eng. & Mg. Jour., vol. 78, pp. 383-384, 4 figs., 1904.

   Gives observations upon the general geology, and the occurrence of the gold-ore deposits.

Dresser (John A.).

1. Report on the geology and petrography of Shefford Mountain, Quebec.

   Can. Geol. Surv., Ann. Rept., new ser., vol. 13, 35 pp., 6 pls., 1 fig., and 1 map, 1903. (Published separately, 1902.)

   Describes the general geology, and the occurrence, relations, and composition of the igneous rocks of this area.

2. Geology of Brome Mountain, one of the Monteregian Hills.

   Am. Jour. Sci., 4th ser., vol. 17, pp. 347-358, 2 figs, 1904.

   Describes the position and physiographic origin of the Monteregian Hills and in detail the petrography of Brome Mountain.

3. A new area of copper-bearing rocks in the eastern townships of the Province of Quebec.

   Can. Mg. Rev., vol. 23, p. 29, 1904. Can. Mg. Inst., Jour., vol. 7. Advance separate, 4 pp., 1904.

   Describes the occurrence and geologic relations.

Dryer (Charles Redway).

1. Finger lake region of western New York.

   Geol. Soc. Am., Bull., vol. 15, pp. 449-460, 4 pls., 1904.

   Describes physiographic features and glacial deposits, particularly moraines, of this region, and discusses their interpretation.

Duerden (J. E.).

1. The morphology of the Madreporaria. V. Septal sequence.

   Biological Bulletin, vol. 7, pp. 79-104, 9 figs., 1904.

2. Recent results on the morphology and development of coral polyps.

   Smith. Misc. Coll., vol. 47 (Quar. Issue, vol. 2, no. 1), pp. 93-111, 16 figs., 1904.

3. The antiquity of the zoanthid actinians.

   Mich. Acad. Sci., 6th Rept., pp. 195-198, 1904.

4. The development and relationships of the Rugosa (Tetracoralla).

   Abstract: Science, new ser., vol. 19, pp. 217-218, 525-526, 1904.

Dutton (Clarence Edward).

1. Earthquakes in the light of the new seismology.

   New York, G. P. Putnam's Sons, 314 pp., 10 pls., 63 figs., 1904.

   A general treatise upon earthquakes, their nature, causes, etc. The Charleston and other American earthquakes are considered.

Dyar (W. W.).

1. The colossal bridges of Utah. A recent discovery of natural wonders.

   Century Mag., vol. 68, pp. 505–511, 1904.

E.

Eakle (Arthur S.).

1. Mineral tables for the determination of minerals by their physical properties.

   New York, John Wiley & Sons, 73 pp., 1904.

2. Phosphorescent sphalerite.

   Cal. Jour. Techn., vol. 3, pp. 30–31, 1904.
   Describes the occurrence and characters of a sphalerite from Mariposa County, California, and its property of phosphorescence.

Eakle (A. S.) and **Sharwood** (W. J.)

1. Luminescent zinc-blende.

   Eng. & Mg. Jour., vol. 77, p. 1000, 1904.
   Describes occurrence in Mariposa County, California, composition, and physical qualities.

Eastman (C. R.).

1. On the nature of Edestus and related forms.

   Mark Anniversary Volume [Harvard University], New York, Henry Holt and Company, pp. 279–289, 1 pl., 1903.
   A critical discussion based upon new material lately discovered.

2. On the dentition of Rhynchodus and other fossil fishes.

   Am. Nat., vol. 38, pp. 295–299, 2 figs., 1904.
   Includes a description of Rhynchodus pertenuis n. sp.

3. A recent paleontological induction.

   Science, new ser., vol. 20, pp. 465–466, 1904.
   Discusses the association of pebbles with the remains of plesiosaurs.

4. On upper Devonian fish remains from Colorado.

   Am. Jour. Sci., 4th ser., vol. 18, pp. 253–260, 6 figs., 1904.
   Describes the occurrence and character of fish remains from Devonian strata in the San Juan region of Colorado, and gives a systematic description of a new form.

5. Fossil plumage.

   Am. Nat., vol. 38, pp. 669–672, 1 fig., 1904.

6. Systematic paleontology of the Miocene deposits of Maryland: Pisces.

   Md. Geol. Surv., Miocene, pp. 71–93, 5 pls., 1904.

Eaton (George F.).

1. Characters of Pteranodon (second paper).

   Am. Jour. Sci., 4th ser., vol. 17, pp. 318–320, 2 pls., 1904.

2. Obituary—John Bell Hatcher.

   Am. Jour. Sci., 4th ser., vol. 18, pp. 163–164, 1904.

Eckel (Edwin C.).

1. Gypsum deposits in New York.

U. S. Geol. Surv., Bull. no. 223, pp. 33-35, 1 pl., 2 figs., 1904.

Describes economic development and geologic relations of the gypsum deposits in the Salina group.

2. Gypsum deposits in Virginia.

U. S. Geol. Surv., Bull. no. 223, pp. 36-37, 1 pl., 1 fig., 1904.

Describes economic development and geologic relations of gypsum beds occurring in Carboniferous strata.

3. The slate deposits of California and Utah.

U. S. Geol. Surv., Bull. no. 225, pp. 417-422, 1904.

Describes the occurrence and character of slate deposits in Eldorado County, California, and near Provo, Utah.

4. Cement-rock deposits of the Lehigh district of Pennsylvania and New Jersey.

U. S. Geol. Surv., Bull. no. 225, pp. 448-455, 1904.

Describes location and general geology of the district, the stratigraphic position and character of the cement rock, methods of manufacturing and character of the product.

5. The salt industry in Utah and California.

U. S. Geol. Surv., Bull. no. 225, pp. 488-495, 1904.

Describes character and source of materials used and methods of manufacture employed.

6. On a California roofing slate of igneous origin.

Jour. Geol., vol. 12, pp. 15-24, 1904.

Describes occurrence and character of slate deposits in California and discusses their origin.

7. On the chemical composition of American shales and roofing slates.

Jour. Geol., vol. 12, pp. 25-29, 1904.

8. The nonmetallic mineral products of the United States.

Mg. Mag., vol. 10, pp. 167-174, 1 pl., 1904.

Contains notes on the occurrence of nonmetallic mineral products.

9. Brown hematite deposits of eastern New York and western New England.

Eng. & Mg. Jour., vol. 78, pp. 432-434, 6 figs., 1904.

Describes the general geology of the region, and the character and occurrence of the iron ores, and discusses their origin.

10. The materials and manufacture of Portland cement.

Ala. Geol. Surv., Bull. no. 8, pp. 1-59, 1904.

Includes a discussion of the origin and general characters of limestone and other raw materials used in cement manufacture.

Eckel (E. C.), **Johnson** (L. C.) and.

1. Notes on wells, springs, and general water resources of Mississippi.

See Johnson (L. C.) and Eckel (E. C.), 1.

Edwards (W. F.).

1. The new geology and vein formation. Discussion.

Colo. Sci. Soc., Proc., vol. 7, pp. 289–296, 1904.

Describes the history of the nebular hypothesis and discusses the relative merits of this and the planetesimal hypothesis.

Eggleston (Julius Wooster).

1. Physiography—an outline of its scope and applications.

Colo. Sch. Mines, Bull., vol. 2, no. 3, pp. 96–110, 1904.

Describes physiographic areas of the United States and various local physiographic features as illustrative of principles set forth in the paper.

Emerson (Benjamin Kendall).

1. General geology. Notes on the stratigraphy and igneous rocks [of Alaska].

Harriman Alaska Expedition, vol. 4, pp. 11–56, 5 pls., 13 figs., 1904.

Describes the geology of points visited by the Harriman Alaska expedition, including the occurrence and character of igneous, metamorphic, and sedimentary rocks in Alaska, the petrographic characters of various rocks collected, and the age and correlation of fossil-bearing formations.

2. Note on a calcite-prehnite cement rock in the tuff of the Holyoke Range.

Am. Jour. Sci., 4th ser., vol. 17, pp. 277–278, 1904.

Describes the character and occurrence of this rock.

Emerson (Benjamin Kendall), **Loomis** (F. B.) and.

1. On Stegomus longipes, a new reptile from the Triassic sandstones of the Connecticut Valley.

Am. Jour. Sci., 4th ser., vol. 17, pp. 377–380, 1 pl., 1904.

Emerson (Philip).

1. Note on glacial topography in central New Hampshire.

Appalachia, vol. 10, pp. 299–303, 1904.

Describes physiographic features in central New Hampshire.

Emmons (S. F.).

1. Theories of ore deposition historically considered.

Geol. Soc. Am., Bull., vol. 15, pp. 1–28, 1904. Eng. & Mg. Jour., vol. 77, pp. 117–119, 157–159, 199–200, 237–238, 1904. New Zealand Mines Record, vol. 7, pp. 384–387, 426–429, 1904.

Reviews in chronologic order the various theories held at different periods of time regarding the origin of ore deposits.

2. The Virginius mine.

Eng. & Mg. Jour., vol. 77, p. 311, 1 fig., 1904.

Gives observations upon the occurrence and geologic relations of the ore bodies of copper and galena.

3. Investigation of metalliferous ores.

U. S. Geol. Surv., Bull. no. 225, pp. 18–24, 1904.

Gives a short summary statement respecting the economic publications of the preceding year relating to metalliferous ores and the field work carried on in this division.

Emmons (S. F.)—Continued.

4. Occurrence of copper ores in Carboniferous limestone in the region of the Grand Canyon of the Colorado.

Abstract: Science, new ser., vol. 20, pp. 760–761, 1904.

Emmons (S. F.), **Hayes** (C. W.).

1. Contributions to economic geology, 1903.

U. S. Geol. Surv., Bull. no. 225, 527 pp., 1 pl., 11 figs., 1904.

Emmons (S. F.), **Irving** (John Duer) and.

1. Economic resources of the northern Black Hills. Part II. Mining geology.

See Irving (John Duer) and Emmons (S. F.), 1.

Evans (Herbert M.).

1. A new cestraciont spine from the lower Triassic of Idaho.

Cal. Univ., Dept. Geol., Bull., vol. 3, pp. 397–401, 1 pl., 1904.

Eyerman (John).

1. Contributions to mineralogy.

Am. Geol., vol. 34, pp. 43–48, 1904.

Describes the occurrence, characters, and composition of some minerals from New Jersey and Pennsylvania.

F.

Fairbanks (H. W.).

1. Gypsum deposits in California.

U. S. Geol. Surv., Bull. no. 223, pp. 119–123, 1 pl., 1904.

Describes character, occurrence, and geologic relations of the gypsum deposits of California.

2. San Luis folio, California.

U. S. Geol. Surv., Geol. Atlas of U. S., folio no. 101, 1904.

Describes topography and drainage, climate and vegetation, the character, occurrence, and relations of Juratrias (?), Cretaceous, and Tertiary sedimentary rocks and included igneous rocks, the geologic structure and history of the area, the development of the physiographic features, and the economic resources and soils.

Fairchild (Herman Le Roy).

1. Direction of pre-Glacial stream flow in central New York.

Am. Geol., vol. 33, pp. 43–45, 1904.

2. Geology under the new hypothesis of earth origin.

Am. Geol., vol. 33, pp. 94–116, 1904.

Compares the sufficiency of the nebular and planetesimal hypotheses and discusses the explanation given by the latter of the origin of the atmosphere and ocean, volcanic phenomena, deposits of hydrocarbons, ores, salt, and gypsum, climate in geologic time, glaciation, crustal movements, and life on the earth.

3. Geology under the planetesimal hypothesis of earth origin.

Geol. Soc. Am., Bull., vol. 15, pp. 243–266, 1904.

See preceding entry. Includes discussion by Edward H. Kraus, Willis T. Lee, Israel C. Russell, and Frederick W. Sardeson.

Fairchild (Herman Le Roy)—Continued.

4. Glacial waters from Oneida to Little Falls [New York].

N. Y. State Mus., 56th Ann. Rept., vol. 1, and N. Y. State Geol., 22d Rept., pp. r17–r41, 26 pls., 1904.

Describes the position and extent of waters along the ice front, and the drainage at different stages of the Glacial epoch in north central New York, as determined from the occurrence, character, etc., of Glacial deposits.

5. Glacial drainage in central western New York.

Abstract: Geol. Soc. Am., Bull., vol. 14, p. 553, 1904.

6. Evidences of slight Glacial erosion in western New York.

Abstract: Sci. Am. Suppl., vol. 57, p. 23447, 1904.

Falconer (J. D.).

1. The evolution of the Antilles.

Scot. Geog. Mag., vol. 18, pp. 369–376, 1 pl., 1902.

Discusses the general geologic history of America and more particularly that of Central America and the West Indies.

Farrington (Oliver Cummings).

1. Gems and gem minerals.

Chicago, A. W. Mumford, 229 pp., 16 pls., 61 figs., 1903.

2. Observations on the geology and geography of western Mexico, including an account of the Cerro Mercado.

Field Col. Mus., Geol. ser., vol. 2, pp. 197–228, 16 pls., 5 figs., 1904. Abstract: Geol. Soc. Am., Bull., vol. 15, pp. 549–550, 1904.

Describes physiographic features, climatic conditions, the general geology and silver-mining developments of this part of Mexico, and in detail the Cerro Mercado (Iron Mountain), particularly the occurrence and characters of the iron ore, minerals, and rocks.

3. The geographical distribution of meteorites.

Pop. Sci. Monthly, vol. 64, pp. 351–354, 1904.

Fenneman (N. M.).

1. Structure of the Boulder oil field, Colorado, with records for the year 1903.

U. S. Geol. Surv., Bull. no. 225, pp. 383–391, 1 fig., 1904.

Describes the location and geologic structure of the field, and the occurrence and production of petroleum.

Finch (Grant E.).

1. Notes on the position of the individuals in a group of Nileus vigilans found at Elgin, Iowa.

Iowa Acad. Sci., Proc., vol. 11, pp. 179–181, 1 pl., 1904.

Finch (John W.).

1. The circulation of underground aqueous solutions and the deposition of lode ores.

Colo. Sci. Soc., Proc., vol. 7, pp. 193–252, 1904. Ores & Metals, vol. 13, no. 12, pp. 19–22; no. 13, pp. 22–24; no. 14, pp. 21–24, 1904.

Discusses underground water and the formation of ore deposits.

Finlay (George I.).

1. The geology of the San José district, Tamaulipas, Mexico.

N. Y. Acad. Sci., Annals, vol. 14, pp. 247-295, 11 pls., 1904. Columbia Univ., Geol. Dept., Contr., vol. 11, no. 100, 1904.

Describes the topography and the general geologic structure of the region, the field relations of the igneous rocks, and in detail their petrographic characters.

Finlay (George I.) and **Kemp** (J. F.).

1. Nepheline syenite area of San José, Tamaulipas, Mexico.

Abstract: Geol. Soc. Am., Bull., vol. 14, p. 534, 1904.

See no. 397 of U. S. Geol. Surv., Bull. no. 240.

Finlay (J. R.).

1. The mining industry of the Cœur d'Alene district, Idaho. The ore formation. The production and methods of operating.

Mines & Minerals, vol. 24, pp. 497-498, figs. 1-2, 1904.

Abstract of paper read before the American Institute of Mining Engineers in 1902, together with comments by Arthur Lakes.

Fisher (Cassius A.).

1. Coal fields of the White Mountain region, New Mexico.

U. S. Geol. Surv., Bull. no. 225, pp. 293-294, 1904.

Describes the location of the field and the occurrence and character of the coals.

2. Coal of the Bighorn basin, in northwest Wyoming.

U. S. Geol. Surv., Bull. no. 225, pp. 345-362, 1904.

Describes the geologic structure of the field, the character and occurrence of the coals, and the mining operations.

Fletcher (Hugh).

1. Limits of the workable coals of the Cumberland coal fields in Nova Scotia.

Nova Scotia Mg. Soc., Jour., vol. 8, pp. 123-126, 1904.

Includes observations upon the geology of the region, and discusses the possibility of workable coal seams being found at certain points in the light of geological facts presented.

Fluck (Frank).

1. Lower Coal Measures of central Pennsylvania.

Mines & Minerals, vol. 24, p. 574, 2 figs., 1904.

Describes occurrence and character of coal seams of central Pennsylvania.

Flynn (Benjamin H.) and **Flynn** (Margaret S.).

1. The natural features and economic development of the Sandusky, Maumee, Muskingum, and Miami drainage areas in Ohio.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 91, 130 pp., 11 figs., 1904.

Includes a brief account of the topography and general geology of the areas considered.

Foerste (August F.).

1. Variation in thickness of the subdivisions of the Ordovician of Indiana. With notes on the range of certain fossils.

   Am. Geol., vol. 34, pp. 87–102, 1 pl., 1904.

2. The Ordovician-Silurian contact in the Ripley Island area of southern Indiana, with notes on the age of the Cincinnati geanticline.

   Am. Jour. Sci., 4th ser., vol. 18, pp. 321–342, 2 pls. (maps), 1904.

   Discusses the stratigraphic evidence for the time of formation of the Cincinnati geanticline, the occurrence, character, and relations of Ordovician and Silurian formations in Ohio, Indiana, and Kentucky, and gives observations upon the stratigraphic position of various fossils, the relationships of Silurian faunas of Indiana with those of New York, and lists of Niagara fossils of Indiana.

3. Description of the rocks formed in the different geological periods in Indiana: Ordovician and Silurian.

   Ind., Dept. Geol. & Nat. Res., 28th Ann. Rept., pp. 21–39, 1904.

Foote (W. M.).

1. Complete mineral catalog. Part I, Mineral collections and material for the laboratory. Part II, Descriptive account of choice specimens. Meteorites. Price list of individual specimens. Classified table of minerals, according to Dana's System, with index. Metallurgical classification of minerals.

   Philadelphia, Foote Mineral Company. 215 pp., 29 pls. [1904].

Forstner (William).

1. Genesis of ore deposits at the Royal mine, Hodson, Cal.

   Mg. & Sci. Press, vol. 88, pp. 314–315, 7 figs., 1904.

   Describes the occurrence and geologic relations of the ore bodies and discusses their origin.

2. The quicksilver deposits of California.

   Eng. & Mg. Jour., vol. 78, pp. 385–386, 426–428, 5 figs., 1904.

   Discusses the occurrence and origin of quicksilver ore deposits of California.

Fowler (George L.).

1. The coals and coal-mining methods of the Pocahontas field.

   Eng. Mag., vol. 27, pp. 217–232, ill., 1904.

   Describes the geologic occurrence, fuel value, and mining methods of the Pocahontas coal.

Fraas (E.).

1. Geologische Streifzüge durch die Prärien und Felsengebirge Nordamerikas.

   Württemberg, Jahreshefte des Vereins für vaterländische Naturkunde, Stuttgart, Jahrg. 58, pp. LXV–LXVIII, 1902.

   Contains observations on the Jurassic strata of Wyoming and their vertebrate fossils, and the Bad Lands of South Dakota.

Frazer (Persifor).

1. Geogenesis and some of its bearings on economic geology.

Am. Inst. Mg. Engrs., Trans. (Atlantic City meeting, February, 1904), 11 pp.

Reviews theories of the origin of the earth, and discusses the planetesimal theory and the origin of the hydrocarbons.

Frech (Fritz).

1. Die geographische Verbreitung und Entwickelung des Cambrium.

Congr. géol. intern., Compt. rend. VII Sess., pp. 127–151, 1899.

In discussing the geographic distribution and development of the Cambrian, includes the Cambrian of North America.

Fuller (H. T.).

1. Corundum and emery.

Drury Coll., Bradley Field Geol. Station, Bull., vol. 1, pp. 31–33, 1904.

Describes occurrence and character of deposits of corundum in Ontario, Canada.

Fuller (Myron L.).

1. Ice-retreat in Glacial Lake Neponset and in southeastern Massachusetts.

Jour. Geol., vol. 12, pp. 181–197, 4 figs., 1904.

Describes occurrence and character of Glacial deposits in a part of eastern Massachusetts and discusses the disappearance and accompanying events of the Glacial ice.

2. Hyner gas pool, Clinton County, Pa.

U. S. Geol. Surv., Bull. no. 225, pp. 392–395, 1904.

Describes the occurrence of natural gas in this field and gives the record of one of the borings.

3. Water supplies from wells in southern Louisiana.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 101, pp. 74–81, 2 pls., 1904.

4. Rice irrigation in southern Louisiana.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 101, pp. 82–98, 2 pls., 2 figs., 1904.

5. Contributions to the hydrology of eastern United States, 1903. Introduction.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 102, pp. 9–13, 1904.

6. Organization of the Division of Hydrology and work of the eastern section.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 102, pp. 15–20, 1904.

Outlines the work of the United States Geological Survey in the investigation of underground water resources.

7. Notes on the wells, springs, and general water resources of certain eastern and central states. Introduction.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 102, pp. 21–26, 1904.

Describes the collection, preparation, and utilization of data relating to underground waters, as an introduction to a series of papers by different writers on the underground water resources of certain eastern and central states.

Fuller (Myron L.)—Continued.

8. Notes on the wells, springs, and general water resources of Florida.

U. S. Geol. Surv., Water-Supply and Irrig. Paper no. 102, pp. 238–275, 1904.

9. Experiments on the pollution of deep wells in Georgia.

Abstract: Science, new ser., vol. 19, p. 305, 1904.

10. Evidences of caves of Put-in-Bay, Ohio, on question of land tilting.

Abstract: Science, new ser., vol. 20, p. 761, 1904.

Fuller (Myron L.) and **Clapp** (Frederick G.).

1. Patoka folio, Indiana-Illinois.

U. S. Geol. Surv., Geol. Atlas of U. S., folio no. 105, 1904.

Describes topographic features, the general geologic relations, the character and occurrence of Carboniferous, Tertiary, and Quaternary formations, the geologic structure and history, the economic resources, coal, clay, and building stone, the soils, forest reserves, and water supply.

Furlong (E. L.).

1. An account of the preliminary excavations in a recently explored Quaternary cave in Shasta County, California.

Science, new ser., vol. 20, pp. 53–55, 1904.

Describes occurrence of vertebrate remains and gives lists of forms identified.

Furlong (E. L.), **Sinclair** (William J.) and.

1. Euceratherium, a new ungulate from the Quaternary caves of California.

See Sinclair (William J.) and Furlong (E. L.), 1.

G.

Ganong (W. F.).

1. Notes on the natural history and physiography of New Brunswick.

New Brunswick Nat. Hist. Soc., Bull., vol. 5, pp. 179–241, ill., 1904.

Describes physiographic history of various rivers of New Brunswick.

Garrison (F. Lynwood).

1. The genesis of limonite ores in the Appalachians.

Eng. & Mg. Jour., vol. 78, pp. 470–471, 1904.

2. The iron ores of Shady Valley, Tennessee.

Eng. & Mg. Jour., vol. 78, pp. 590–592, 1904.

Describes the general geology and the occurrence, character, and geologic relations of the iron-ore deposits.

3. Tin in the United States.

Eng. & Mg. Jour., vol. 78, pp. 830–832, 1904.

Discusses the occurrence of tin deposits.

Gidley (J. W.).

1. Proper generic names of Miocene horses.

Am. Mus. Nat. Hist., Bull., vol. 20, pp. 191–194, 1904.

Gidley (J. W.), **Matthew** (W. D.) and.

1. New or little-known mammals from the Miocene of South Dakota. American Museum expedition of 1903.

See Matthew (W. D.) and Gidley (J. W.), 1.

Gilbert (Grove Karl).

1. Alaska. Glaciers and glaciation.

Harriman Alaska Expedition, vol. 3, 231 pp., 27 pls., 11 figs., 1904.

Describes the occurrence and characters of the glaciers and physiographic features of Alaska.

2. Geology and paleontology [of the Harriman Alaska expedition]. Introduction.

Harriman Alaska Expedition, vol. 4, pp. 1-8, 1 pl., 1904.

Describes briefly the itinerary of the Harriman Alaska expedition and the general results obtained.

3. Regulation of nomenclature in the work of the U. S. Geological Survey.

Am. Geol., vol. 33, pp. 138-142, 1904.

Notes some of the changes made in the regulations given in the Tenth Annual Report of the U. S. Geological Survey. The revised regulations appear in the Twenty-fourth Annual Report of the U. S. Geological Survey.

4. The mechanism of the Mont Pelée spine.

Science, new ser., vol 19, pp. 927-928, 1904; Eng. & Mg. Jour., vol. 78, p. 27, 1904.

Offers an explanation of the formation of the spine of Mont Pelé.

5. Domes and dome structure of the high Sierra.

Geol. Soc. Am., Bull., vol. 15, pp. 29-36, 4 pls., 1904.

Describes dome structure and discusses its origin.

6. Variations of Sierra glaciers.

Sierra Club Bull., vol. 5, no. 1, pp. 20-25, 2 pls., 1904.

7. Systematic asymmetry of crest lines in the high Sierra of California.

Jour. Geol., vol. 12, pp. 579-588, 8 figs., 1904.

Discusses the relations of glaciers and physiographic features in the Sierra Nevada Mountains.

8. Origin of Basin ranges.

Abstract: Geol. Soc. Am., Bull., vol. 14, p. 551, 1904.

See no. 448 of U. S. Geol. Surv., Bull. no. 240.

Gillette (Halbers Powers).

1. Osmosis as a factor in ore formation.

Am. Inst. Mg. Engrs., Trans., vol. 34, pp. 710-714, 1904.

See no. 710 of the Bibliography for 1903, U. S. Geol. Surv., Bull. no. 240.

Girty (George H.).

1. New molluscan genera from the Carboniferous.

U. S. Nat. Mus., Proc., vol. 27, pp. 721-736, 3 pls., 1904.

2. Note on the Carboniferous fossils [of the Bisbee Quadrangle, Arizona].

U. S. Geol. Surv., Professional Paper no. 21, pp. 46-54, 2 pls., 1904.

Gives lists of identified fossils with notes upon their occurrence and relations. Some of the more characteristic are figured.

3. The typical species and generic characters of Aviculipecten, McCoy.

Am. Geol., vol. 33, pp. 291-296, 1 fig., 1904.

Girty (George H.)—Continued.

4. The type of Aviculipecten.

Am. Geol., vol. 34, pp. 332–333, 1904.

5. Triticites, a new genus of Carboniferous foraminifers.

Am. Jour. Sci., 4th ser., vol. 17, pp. 234–240, 5 figs., 1904.

6. Upper Paleozoic rocks in Ohio and northwestern Pennsylvania.

Abstract: Science, new ser., vol. 19, pp. 24–25, 1904.
Discusses the equivalency of certain Carboniferous formations.

Glenn (L. C.).

1. Devonian and Carboniferous rocks of southwestern New York.

Abstract: Geol. Soc. Am., Bull., vol. 14, pp. 522–531, 1904.
See no. 459 of U. S. Geol. Surv., Bull. no. 240.

2. Notes on a new meteorite from Hendersonville, N. C., and on additional pieces of the Smithville, Tenn., fall.

Am. Jour. Sci., 4th ser., vol. 17, pp. 215–216, 1904.

3. Notes on the wells, springs, and general water resources of Tennessee.

U. S. Geol. Surv., Water-Supply and Irrig. Paper no. 102, pp. 358–367, 1904.

4. Notes on the wells, springs, and general water resources of Kentucky.

U. S. Geol. Surv., Water-Supply and Irrig. Paper no. 102, pp. 369–373, 1904.

5. Systematic paleontology of the Miocene deposits of Maryland: Pelecypoda.

Md. Geol. Surv., Miocene, pp. 274–401, 44 pls., 1904.

6. The more common minerals of the region about Nashville [Tennessee].

Eng. Assoc. South, Trans., 1903, pp. 103–113 [1904].
Discusses the general principles controlling occurrence of minerals, and describes the occurrence and character of minerals from central Tennessee.

7. Fossiliferous sandstone dikes in the Eocene of Tennessee and Kentucky.

Abstract: Science, new ser., vol. 19, p. 522, 1904.

Goldthwait (James Walter), **Huntington** (Ellsworth).

1. The Hurricane fault in the Toquerville district, Utah.

See Huntington (E.) and Goldthwait (J. W.), 1.

Gordon (C. H.).

1. On the paramorphic alteration of pyroxene to compact hornblende.

Am. Geol., vol. 34, pp. 40–43, 1904.

2. On the pyroxenites of the Grenville series in Ottawa County, Canada.

Jour. Geol., vol. 12, pp. 316–325, 5 figs., 1904.
Describes the occurrence and characters of these rocks and discusses their origin and nomenclature.

Gordon (C. H.)—Continued.

3. The work of rivers.

Northwest Jour. of Education, vol. 15, no. 7, pp. 3–6, 2 figs., 1904.

Discusses erosion and sedimentation by running waters.

Gould (Charles Newton).

1. General geology of Oklahoma.

Okla., Dept. Geol. & Nat. Hist., 2d Bien. Rept., pp. 17–74, 1902.

Describes the drainage, the occurrence, character, and relations of igneous rocks and sedimentary rocks of Carboniferous, Cretaceous, and Tertiary age, including an extended and detailed account of the Red Beds in Oklahoma, and a historical review of investigations upon their stratigraphic position and geologic age in Texas, Kansas, and Oklahoma.

2. Oklahoma gypsum.

Okla., Dept. Geol. & Nat. Hist., 2d Bien. Rept., pp. 75–137, 1902.

Describes the occurrence, character, and utilization of the gypsum deposits in Oklahoma, and discusses their geologic relations and origin.

3. Gypsum deposits in Oklahoma.

U. S. Geol. Surv., Bull. no. 223, pp. 60–67, 2 pls., 6 figs., 1904.

Describes character, occurrence, economic development, and geologic relations of gypsum deposits occurring in Permian strata.

4. Geology of Jacobs Cavern, McDonald County, Missouri.

Phillips Acad., Andover, Mass., Dept. Archaeology, Bull. 1, pp. 9–12, 1904.

5. Geology of the Wichita Mountains of Oklahoma.

Okla., Dept. Geol. & Nat. Hist., 3d Bien. Rept., pp. 15–22, 1904.

Describes the physiography of the region, and the character and occurrence of igneous rocks, and of sedimentary rocks of Cambrian, Ordovician, and Carboniferous age.

Gowling (F. A.).

1. Notes on geology of Mineral Creek district, Pinal County, Arizona.

Mg. Rep., vol. 49, pp. 501–504, 1904.

Describes the stratigraphy of the region and the occurrence of the ore deposits.

Grabau (Amadeus W.).

1. On the classification of sedimentary rocks.

Am. Geol., vol. 33, pp. 228–247, 1904. Columbia Univ., Geol. Dept., Contr., vol. 12, no. 101, 1904.

Proposes a classification of sedimentary rocks and sets forth the principles upon which it is based.

2. Phylogeny of Fusus and its allies.

Smith. Misc. Coll., vol. 44, pp. 1–157, 18 pls., 22 figs., 1904.

Includes descriptions of American Tertiary forms.

Grabau (A. W.), **Johnson** (C. W.), and.

1. A new species of Clavilithes from the Eocene of Texas.

See Johnson (C. W.) and Grabau (A. W.), 1.

Grant (C. C.).

1. Notes on past collecting season.

Hamilton Sci. Assoc., Jour. & Proc., no. 20, pp. 29–46, 4 figs., 1904.

Gives notes on the occurrence of Silurian fossils near Hamilton, Ontario.

Grant (U. S.).

1. Investigations on the Lake Superior iron ore deposits.

   Mg. Mag., vol. 10, pp. 175–183, 6 figs., 1904.

   Describes the general geology of the region, and the occurrence, geologic relations, character, and origin of the iron ore deposits.

2. Field work in the Wisconsin lead and zinc district.

   Abstract: Geol. Soc. Am., Bull., vol. 15, pp. 552–553, 1904; Science, new ser., vol. 19, p. 526, 1904; Sci. Am. Suppl., vol. 57, p. 23446, 1904; Eng. & Mg. Jour., vol. 77, p. 74, 1904.

   Describes briefly the method adopted in a combined topographic, geographic, and geologic survey in this region.

3. A pre-Glacial peneplain in the driftless area.

   Abstract: Science, new ser., vol. 19, p. 528, 1904; Sci. Am. Suppl., vol. 57, p. 23446, 1904.

Gratacap (L. P.).

1. Vade mecum guide. A popular guide to mineral collections. With a chapter on the development of mineralogy.

   New York, The Broadway Press, no date. 178 pp., illus.

2. Geology of the City of New York (Greater New York), with geological map. Second edition. For use in schools, institutes, and classes.

   New York, Brentano's, 1904. 119 pp., 35 figs. and geol. map.

Greene (George K.).

1. Contribution to Indiana paleontology. Part XVII.

   New Albany, Ind., pp. 168–175, 3 pls., 1904.

   Contains descriptions of Devonian and Carboniferous corals by George K. Greene, and of Carboniferous echinoderms by R. R. Rowley.

2. Contribution to Indiana paleontology. Part XVIII.

   New Albany, Ind., pp. 176–184, 3 pls., 1904.

   Contains descriptions of Devonian and Carboniferous corals by George K. Greene, and of Devonian and Carboniferous echinoderms by R. R. Rowley.

3. Contribution to Indiana paleontology. Part XIX.

   New Albany, Ind., pp. 185–197, 3 pls., 1904.

   Contains descriptions of Devonian, Silurian, and Carboniferous corals by G. K. Greene, and of Carboniferous and Devonian echinoderms by R. R. Rowley. The latter contributes a review of Dr. G. Hambach's Revision of the Blastoideæ.

4. Contribution to Indiana paleontology. Part XX.

   New Albany, Ind., pp. 198–204, pls. 58–60, 1904.

   Contains specific descriptions of Devonian corals by George K. Greene.

   Parts I–XX, February, 1898, to September, 1904, form volume 1 of the "Contribution to Indiana paleontology."

Greger (D. K.).

1. The distribution and synonymy of Ptychospira sexplicata (White and Whitfield).

   Am. Geol., vol. 33, pp. 15–17, 1904.

Greger (D. K.)—Continued.

2. On the genus Rhynchopora, King, with notice of a new species.

Am. Geol., vol. 33, pp. 297-301, 12 figs., 1904.

Gregory (H. E.).

1. Notes on the wells, springs, and general water resources of Connecticut.

U. S. Geol. Surv., Water-Supply and Irrig. Paper no. 102, pp. 127-168, 1904.

Gregory (W. M.).

1. The alabaster area [Michigan].

Mich. Geol. Surv., vol. 9, pt. 2, pp. 60-77, 1904.

Describes the glacial geology, the physiographic features, and the Paleozoic geological formations exposed in this area.

Griffith (William).

1. A Missouri coal field.

Eng. & Mg. Jour., vol. 77, pp. 564-565, 5 figs., 1904.

Describes the occurrence and character of coal in Morgan County, Missouri.

Grimsley (G. P.).

1. Gypsum deposits in Michigan.

U. S. Geol. Surv., Bull. no. 223, pp. 45-47, 1904.

Describes occurrence, character, economic development, and geologic relations of the gypsum deposits.

2. Gypsum deposits in Kansas.

U. S. Geol. Surv., Bull. no. 223, pp. 53-59, 1 pl., 3 figs., 1904.

Describes character, occurrence, economic development, and geologic relations of the gypsum deposits in Kansas.

3. A theory of origin for the Michigan gypsum deposits.

Am. Geol., vol. 34, pp. 378-387, 1904.

Describes the general geology of lower Michigan and the geological history of the Michigan basin, and discusses the conditions under which the gypsum deposits of this area were produced.

4. The gypsum of Michigan and the plaster industry.

Mich. Geol. Surv., vol. 9, pt. 2, 246 pp., 29 pls., 49 figs., 1904.

Gives an account of the occurrence and utilization of gypsum deposits in other countries and states, describes the geology and topography of the Michigan series gypsum, and the mining of the gypsum deposits and manufacture into plaster, and discusses the origin of gypsum and its various uses.

Gulick (Addison).

1. The fossil land shells of Bermuda.

Phila. Acad. Nat. Sci., Proc., vol. 56, pp. 406-421, 1 pl. and 3 figs. (maps), 1904.

Describes the occurrence and gives systematic descriptions of fossil land shells of Bermuda.

Gulliver (F. P.).

1. Nantucket shorelines. I.

Abstract: Geol. Soc. Am., Bull., vol. 14, pp. 555-556, 1904.

Outlines a proposed investigation to determine changes in shore lines.

2. Nantucket shorelines. II.

Geol. Soc. Am., Bull., vol. 15, pp. 507-522, 4 pls., 4 figs., 1904.

Describes recent changes in the shore lines of Nantucket Island.

Gwillim (J. C.).

1. Notes on some western coals.

Can. Mg. Inst., Jour., vol. 7. Advance separate, 3 pp., 1904.

Gives observations upon the occurrence and character of coals in Alberta and British Columbia, and their geologic horizons.

H.

Haanel (Eugene).

1. Discussion of Mr. W. M. Brewer's paper on "The rock-slide at Frank, Alberta Territory, Canada."

Inst. Mg. Engrs., Trans., vol. 26, pp. 157–163, 1904.

See no. 125 of U. S. Geol. Surv., Bull. no. 240.

Haas (Hippolyt).

1. Der Vulkan. Die Natur und das Wesen der Feuerberge im Lichte der neueren Anschauungen für die Gebildeten aller Stände in gemeinfasslicher Weise dargestellt.

Berlin, Alfred Schall. 340 pp., 32 pls., [1904].

A general discussion of volcanic activity, its causes, nature, etc. One chapter is devoted to volcanic eruptions in the Lesser Antilles in 1902.

Haehl (H. L.) and **Arnold** (Ralph).

1. The Miocene diabase of the Santa Cruz Mountains in San Mateo County, California.

Am. Phil. Soc., Proc., vol. 43, pp. 16–53, 27 figs., 1904.

Describes character and occurrence of Tertiary formations and included igneous rocks, and the petrographic characters of the latter. Includes lists of fossils contained in the Tertiary formations.

Hager (Lee).

1. The mounds of the southern oil fields.

Eng. & Mg. Jour., vol. 78, pp. 137–139, 180–182, 4 figs., 1904.

Describes the general geology of the Gulf coastal region of Louisiana and Texas, and the geologic structure of the mounds and salines, discusses the theories of their origin, and presents a new hypothesis.

Hall (Benjamin M.).

1. Water powers of Alabama, with an appendix on stream measurements in Mississippi.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 107, 253 pp., 9 pls., 9 figs., 1904.

Includes a brief account of the topographic and geologic features of the state.

Hall (Charles E.).

1. Notes on a geological section from Iguala to San Miguel Totolapa, State of Guerrero, Mexico.

Soc. Cient. Ant. Alzate, Mem. y Rev., t. 13, pp. 327–335, 2 pls. (sections), 1903.

Describes character and occurrence of Tertiary and Cretaceous strata and of igneous rocks, and gives several sections showing the geologic relations of these formations.

Hall (C. M.), **Todd** (James E.) and.

1. Geology and water resources of part of the lower James River Valley, South Dakota.

See Todd (James E.) and Hall (C. M.), 1.

2. DeSmet folio, South Dakota.

See Todd (James E.) and Hall (C. M.), 2.

Hall (C. W.).

1. Notes on the wells, springs, and general water resources of Minnesota.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 102, pp. 441–488, 1904.

Halse (Edward).

1. Some silver-bearing veins of Mexico.

Inst. Mg. Engrs. [Engl.], Trans., vol. 27, pp. 169–189, 1904.

Describes occurrence, characters, and geologic relations of silver-ore deposits of Mexico.

Hamilton (W. R.), **Kessler** (H. H.) and.

1. The orbicular gabbro of Dehesa, California.

See Kessler (H. H.) and Hamilton (W. R.), 1.

Harris (Gilbert Dennison).

1. Underground waters of southern Louisiana.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 101, 98 pp., 11 pls., 15 figs., 1904.

Includes an account of the topography and stratigraphy of southern Louisiana.

2. The Helderberg invasion of the Manlius.

Am. Pal., Bull., no. 19 (vol. 4), pp. 53–77, 9 pls., 1904.

Describes sections of Devonian rocks at a number of localities in New York, and discusses their correlation, and the occurrence and faunal relations of the fossils.

Hartzell (Joseph Culver).

1. Das Oberdevon Europas und Nordamerikas.

Inaugural Dissertation, Ludwig Maximilians-Universität zu München. München, Kastner & Callwey, 73 pp., 1904.

Discusses the occurrence and correlation of Devonian strata in Europe, North America, and other parts of the world.

Hasse (Adelaide R.).

1. Reports of explorations printed in the documents of the United States government. (A contribution toward a bibliography.)

Office Superintendent of Documents, Government Printing Office, Washington, 1899, 90 pp.

Contains titles of papers bearing on geology.

Hatcher (J. B.).

1. An attempt to correlate the marine with the nonmarine formations of the middle west.

   Am. Phil. Soc., Proc., vol. 43, pp. 341–365, 2 figs., 1904. Abstract: Science, new ser., vol. 19, p. 717, 1904.

   Discusses conditions governing the formation of marine, brackish, and fresh-water beds, and their application to the correlation and relative age of various Jurassic and Cretaceous horizons of the middle west. A note discussing the views advanced in the paper is added by Mr. T. W. Stanton.

Haworth (Erasmus).

1. The Kansas River flood of 1903.

   Kans. Univ. Geol. Surv., Min. Res. for 1902, pp. 63–81, 19 pls., 1903.

   Describes geologic effects of the flood of 1903 upon the flood plain of the Kansas River.

Haworth (Erasmus), and **Crane** (W. R.), **Adams** (George I.).

1. Economic geology of the Iola quadrangle, Kansas.

   See Adams (George I.), Haworth (Erasmus), and Crane (W. R.), 1.

Hay (O. P.).

1. On some fossil turtles belonging to the Marsh collection in Yale University Museum.

   Am. Jour. Sci., 4th ser., vol. 18, pp. 261–276, 6 pls., 7 figs., 1904.

2. Descriptions of two species of extinct tortoises, one new.

   Phila. Acad. Nat. Sci., vol. 54, pp. 383–388, 7 figs., 1902.

3. On two new species of turtles from the Judith River beds of Montana.

   Carnegie Mus., Annals, vol. 3, no. 1, pp. 178–182, 1 pl., 2 figs., 1904.

4. An important but not well-known locality furnishing Cretaceous fishes.

   Abstract: Geol. Soc. Am., Bull., vol. 14, p. 542, 1904.

   See no. 520 of U. S. Geol. Surv., Bull. no. 240.

5. On the finding of skulls of Trionychidæ in the Bridger deposits of Wyoming.

   Abstract: Science, new ser., vol. 19, p. 254, 1904.

6. A new gigantic tortoise from the Miocene of Colorado.

   Abstract: Science, new ser., vol. 19, pp. 503-504, 1904.

Hayes (C. Willard).

1. Introductions to "Contributions to economic geology, 1903."

   U. S. Geol. Surv., Bull. no. 225, pp. 11–17, 1904.

   Gives a brief statement regarding the publications of the United States Geological Survey bearing upon economic geology. Includes a list of the geologic folios showing the mineral resources described in each.

2. Investigation of nonmetalliferous economic minerals.

   U. S. Geol. Surv., Bull. no. 225, pp. 25–27, 1904.

   A brief summary statement regarding investigations of nonmetalliferous economic minerals completed during the past year or in progress.

Hayes (C. W.), **Emmons** (S. F.).

1. Contributions to economic geology, 1903.

See Emmons (S. F.), Hayes (C. W.), 1.

Hays (Mabel).

1. Winoka gravels, supposed Tertiary deposits. Description of deposits.

Drury Coll., Bradley Field Geol. Station, Bull., vol. 1, pp. 19–21, 1904.

Describes the character and occurrence of gravel deposits in southwestern Missouri.

Heilprin (Angelo).

1. The nature of the Pelée tower.

Science, new ser., vol. 19, pp. 800–801, 1904.

Discusses the mode of formation of the spine of Mont Pelé.

2. The tower of Pelée: new studies of the great volcano of Martinique.

Philadelphia, J. B. Lippincott & Co., 1904. 62 pp., 23 pls., 4to.

Henderson (Junius).

1. The Arapahoe glacier in 1903.

Jour. Geol., vol. 12, pp. 30–33, 1 fig., 1904.

Compares the status of the Arapahoe glacier of Colorado in 1903 with that of 1902.

2. The overturns in the Denver basin [Colorado].

Colo. Univ., Studies, vol. 1, pp. 345–347, 2 figs., 1904.

Reprinted from the Journal of Geology, vol. 11, pp. 584–586, 1903. See no. 549 of U. S. Geol. Surv., Bull. no. 240.

3. Paleontology of the Boulder area [Colorado].

Colo. Univ., Studies, vol. 2, pp. 95–107, 1904.

Gives lists, with notes on their occurrence and character, of fossils found in formations of Cretaceous age in the Boulder, Colorado, area.

Henrich (Carl).

1. The Guanajuato mining district [Mexico].

Mg. Mag., vol. 10, pp. 23–30, 101–108, 15 figs., 1904.

Describes the occurrence, geologic relations, and mining of the silver ores of this region.

Herrick (Clarence Luther).

1. A Coal-Measure forest near Socorro, New Mexico.

Jour. Geol., vol. 12, pp. 237–251, 10 figs., 1904.

Describes the general geologic structure of the Rio Grande Valley, and the occurrence, character, and fauna of Coal-Measure strata in vicinity of Socorro, New Mexico.

2. Laws of formation of New Mexico mountain ranges.

Am. Geol., vol. 33, pp. 301–312, 393, 2 pls., 1904.

Describes the geologic structure and physiographic features of various mountain ranges of New Mexico.

3. The clinoplains of the Rio Grande.

Am. Geol., vol. 33, pp. 376–381, 1 fig., 1904.

Describes the character, occurrence, and origin of clinoplains in the vicinity of Socorro, New Mexico.

Herrick (Clarence Luther)—Continued.

4. Lake Otero, an ancient salt lake basin in southeastern New Mexico.

Am. Geol., vol. 34, pp. 174–189, 1 pl., 3 figs., 1904.

Describes the geologic structure and history, physiographic features, and economic resources of the region, the character and relations of the formations present, and the extent and history of the ancient lake Otero.

Herrick (H. N.)

1. Gypsum deposits in New Mexico.

U. S. Geol. Surv., Bull. no. 223, pp. 89–99, 1 pl., 9 figs., 1904.

Describes character, occurrence, and geologic relations of the gypsum deposits of New Mexico.

Hershey (Oscar H.).

1. The Bragdon formation in northwestern California.

Am. Geol., vol. 33, pp. 248–256, 347–360, 1904.

Discusses the occurrence, character, and geologic relations of the Bragdon and associated formations, and presents evidences of the age of the Bragdon, which is affirmed to be Jurassic.

2. The river terraces of the Orleans basin, California.

Cal. Univ., Dept. Geol., Bull., vol. 3, pp. 423–475, 1904.

Outlines briefly the bed-rock geology and geomorphogeny of the region, gives detailed descriptions of the occurrence and characteristic features of the terrace remnants, and discusses the problems presented by them and their correlation with the Quaternary terrace system of other portions of California.

Hill (Benjamin F.).

1. Gypsum deposits in Texas.

U. S. Geol. Surv., Bull. no. 223, pp. 68–73, 1 fig., 1904.

Describes character, occurrence, and economic development of gypsum deposits in Texas.

2. Das Vorkommen der texanischen Quecksilbermineralien.

Zeitsch. f. Krystal. u. Min., Bd. 39, pp. 1–2, 1904.

Describes the occurrence in Texas of minerals containing quicksilver.

Hill (Robert T.).

1. The Guanajuato mining district [Mexico].

Eng. & Mg. Jour., vol. 77, pp. 599–601, 642–644, 7 figs., 1904.

Includes observations on the geology of the region and the occurrence and character of the gold and silver ores.

2. Report upon the geology of the Santo Domingo placer fields, Magdalena district, Sonora, Mexico.

Greene Consolidated Gold Company [Prospectus], New York, pp. 12–24, 10 pls., 1904.

Describes the location and general geology of the district, and the character, occurrence, and geologic relations of sedimentary formations, of igneous rocks, and of placer gold deposits, and discusses the source of the gold.

Hille (F.).

1. The Baraboo iron ore.

Eng. & Mg. Jour., vol. 77, p. 875, 1904.

Discusses the geologic age and origin of the iron ores of Baraboo, Wisconsin.

Hille (F.)—Continued.

2. Genesis of the Animikie iron range [Ontario].

Can. Mg. Inst., Jour., vol. 6, pp. 245–287, 1904.

Discusses the geologic data bearing upon the presence and amount of iron ore north of the International Boundary in this region, the character, occurrence, classification, and nomenclature of Archean and Algonkian formations, the origin, constituents, and metamorphism of their rocks, and the origin of the iron ores.

Hillebrand (W. F.).

1. Emmonsite (?) from a new locality.

Am. Jour. Sci., 4th ser., vol. 18, pp. 433–434, 1904.

Describes the occurrence, optical and other characters, and chemical composition of a mineral, provisionally regarded as emmonsite, from Cripple Creek, Colorado.

Hillebrand (W. F.), **Lindgren** (Waldemar) and.

1. Minerals from the Clifton-Morenci district, Arizona.

See Lindgren (Waldemar) and Hillebrand (W. F.), 1.

Hillebrand (W. F.), **Schaller** (W. T.) and.

1. Crystallographical and chemical notes on lawsonite.

See Schaller (W. T.) and Hillebrand (W. F.), 1.

Hind (Wheelton).

1. The type of Aviculipecten.

Am. Geol., vol. 34, pp. 200–201, 1904.

Hitchcock (A. S.).

1. Controlling sand dunes in the United States and Europe.

Nat. Geog. Mag., vol. 15, pp. 43–47, illus., 1904.

Hitchcock (C. H.).

1. New studies in the Ammonoosuc district of New Hampshire.

Geol. Soc. Am., Bull., vol. 15, pp. 461–482, 3 pls., 1904.

Describes the occurrence, with lists of forms identified, of Silurian fossils, and the occurrence, characters, and geologic relations of Silurian and perhaps other Paleozoic sedimentary strata, in large part metamorphosed, and of igneous rocks. The paper includes a description of Dalmanites lunatus by Avery E. Lambert.

2. Glaciation of the Green Mountains.

Montpelier, Vt., Argus and Patriot Press, 1904. 21 pp. [Private publication.]

Describes various evidences of glacial action upon high summits in the Green Mountains in Vermont and the Adirondacks of New York, and discusses glaciation in New England and New York.

3. Glaciation of the Green Mountain Range.

Vt. Geol Surv., Rept. State Geol., IV., pp. 67–85, 1904.

Hobbs (William Herbert).

1. Lineaments of the Atlantic border region.

Geol. Soc. Am., Bull., vol. 15, pp. 483–506, 3 pls., 4 figs., 1904.

Describes the orientation of earth lineaments, namely, mountain ranges, ridges, borders of plateaus, drainage lines, coast lines, boundary lines of geologic formations, fall lines, boundaries of physiographic provinces, etc.

Hobbs (William Herbert)—Continued.

2. Tectonic geography of southwestern New England and southeastern New York.

Abstract: Geol. Soc. Am., Bull., vol. 15, pp. 554–557, 1904; Science, new ser., vol. 19, p. 527, 1904; Sci. Am. Suppl., vol. 57, p. 23446, 1904.

Discusses the relations of fault systems to one another in the area considered, and related geographic features.

Hoernes (Rudolf).

1. Die vulkanischen Ausbrüche auf den Kleinen Antillen.

Steiermark naturw. Ver., Mitt., Jahrg. 1902, Heft 39, pp. LXXXI–XCII, 1903.

Describes the volcanic eruptions and the attendant phenomena that took place in the Lesser Antilles in 1902.

Hoffmann (G. Christian).

1. Report of the section of chemistry and mineralogy.

Can. Geol. Surv., Ann. Rept., new ser., vol. 13, 67 pp., 1903.

Holder (Charles F.).

1. Meteorites and their collectors.

Sci. Am., vol. 90, p. 10, 1904.

2. Natural monuments.

Sci. Am., vol. 90, p. 139, 1904.

Describes pillars and other features resulting from erosion.

Holland (W. J.).

1. In memoriam, John Bell Hatcher.

Carnegie Mus., Ann., vol. 2, pp. 597–604, 1 pl. (por.), 1904; Geol. Mag., dec. 5, vol. 1, pp. 568–573, 1904.

Hollick (Arthur).

1. Systematic paleontology of the Miocene deposits of Maryland: Angiospermæ.

Md. Geol. Surv., Miocene, pp. 483–486, 1 fig., 1904.

2. Additions to the paleobotany of the Cretaceous formation on Long Island. No. II.

N. Y. Bot. Garden, Bull., vol. 3, pp. 403–418, 10 pls., 1904.

3. Some recently discovered facts in regard to Silver Lake [Staten Island, New York].

Staten Island Nat. Sci. Assoc., Proc., vol. 9, pp. 11–13, 1904.

Gives records of borings at this locality, and notes upon the character of the material passed through.

4. Geological notes.

Staten Island Nat. Sci. Assoc., Proc., vol. 9, p. 25, 1904.

Gives notes upon the occurrence of a submerged peat bed near Staten Island, New York.

5. A recent discovery of amber and other fossil plant remains at Kreischerville [Staten Island, New York].

Staten Island Nat. Sci. Assoc., Proc., vol. 9, pp. 31–32, 1904.

Hollick (Arthur)—Continued.

6. Fossil plants from Kansas.

N. Y. Bot. Garden, Jour., vol. 4, pp. 66–68, 4 figs., 1903.

Gives a brief account of a collection of Cretaceous fossil leaves from Kansas.

7. A canoe trip down the Yukon River from Dawson to Anvik [Alaska].

Abstract: Science, new ser., vol. 19, p. 859, 1904; Am. Geol., vol. 33, p. 399, 1904.

Gives observations upon the geology of the region traversed.

Hollister (G. B.),

1. Physiographic features of the Susquehanna basin.

U. S. Geol. Surv., Water-Supply and Irrig. Paper no. 108, pp. 9–18, 1 pl., 1904.

Describes physiographic features of the Susquehanna basin.

Holway (Ruliff S.).

1. Eclogites in California.

Jour. Geol., vol. 12, pp. 344–358, 5 figs., 1904.

Reviews previous work upon eclogites (garnetiferous augite or hornblende) and describes the occurrence and petrographic characters of eclogites from localities in California and Oregon.

Hopkins (T. C.).

1. Mineral resources of Onondaga County, New York.

N. Y. State Mus., 56th Ann. Rept., pp. r109–r114, 1904.

Describes the occurrence and production of building stones, clays, and other economic resources.

2. The geological map of Indiana.

Ind., Dept. Geol. & Nat. Res., 28th Ann. Rept., pp. 11–14, 1904.

Describes the preparation of the geologic map of the State of Indiana (scale: 4 miles to the inch) accompanying the Twenty-eighth Annual Report of the Department of Geology and Natural Resources of Indiana.

3. A short description of the topography of Indiana, and of the rocks of the different geological periods; to accompany the geological map of the State.

Ind., Dept. Geol. & Nat. Res., 28th Ann. Rept., pp. 15–77, 1904.

The part on the Ordovician and the Silurian (pp. 21–39) was written by A. F. Foerste.

4. Contents of the published volumes of reports of the Indiana Geological Survey, the Department of Geology and Natural History, and the Department of Geology and Natural Resources.

Ind., Dept. Geol. & Nat. Res., 28th Ann. Rept., pp. 487–495, 1904.

5. General index to all the publications of the Indiana Geological Survey, the Department of Geology and Natural History, and the Department of Geology and Natural Resources.

Ind., Dept. Geol. & Nat. Res., 28th Ann. Rept., pp. 497–553, 1904.

Hosea (R. M.).

1. Tercio and Cuatro mines. A description of the coal washing and coking plants of the Colorado Fuel & Iron Co. at Tercio and Cuatro [Colorado].

Mines & Minerals, vol. 25, pp. 218–223, 6 figs., 1904.

Includes observations on the general geology of the region.

Hovey (Edmund Otis).

1. The Geological Society of America.

   Eng. & Mg. Jour. vol. 77, pp. 73–74, 1904.
   Gives abstracts of papers read at the sixteenth annual meeting.

2. A remarkable slab of fossil crinoids [from the Cretaceous of Kansas].

   Am. Mus. Jour., vol. 2, pp. 11–14, 1 pl., 1902.

3. Mont Pelé from October 20, 1903, to May 20, 1904.

   Science, new ser., vol. 20, pp. 23–24, 1904.

4. The Soufrière of St. Vincent in July, 1904.

   Science, new ser., vol. 20, pp. 281–282, 1904.
   Describes the condition of the volcano at the date given.

5. The Grand Soufrière of Guadeloupe.

   Am. Geog. Soc., Bull., vol. 36, pp. 513–530, 10 figs., 1904. Abstract: Science, new ser., vol. 19, pp. 859–860, 1904.
   Gives observations upon the geology of the island, and the physical features and volcanic activity of the Grand Soufrière.

6. New cone and obelisk of Mont Pelé.

   Geol. Soc. Am., Bull., vol. 15, pp. 558–560, 2 pls., 1904.

7. Some erosion phenomena observed on the islands of Saint Vincent and Martinique in 1902 and 1903.

   Geol. Soc. Am., Bull., vol. 15, pp. 560–561, 2 pls., 1904.

8. Grande Soufrière of Guadeloupe.

   Geol. Soc. Am., Bull., vol. 15, p. 561, 1904.
   Describes briefly the present condition of this volcano.

9. Bibliography of literature of the West Indian eruptions published in the United States.

   Geol. Soc. Am., Bull., vol. 15, pp. 562–566, 1904.

10. The 1902–1903 eruptions of Mont Pelé, Martinique, and the Soufrière, St. Vincent.

    Congr. géol. intern., Compte rendu IX Sess., pp. 707–738, 11 pls. and 6 figs., 1904.

11. The Crystal Cave of South Dakota.

    Sci. Am. Suppl., vol. 57, pp. 23657–23658, 4 figs., 1904.

12. Some erosion phenomena in St. Vincent and Martinique.

    Abstract: Science, new ser., vol. 19, p. 892, 1904.

13. St. Vincent, British West Indies: the eruptions of 1902 and their immediate results.

    Abstract: Science, new ser., vol. 20, pp. 604–605, 1904.

Hovey (Horace C.).

1. Colossal cavern (Kentucky).

   Spelunca, t. 5, pp. 57–61 (247–251), 2 figs., 1904.
   In the author's separates a copyright plate has been added showing route in the cave.

Howe (Ernest).

1. An occurrence of greenstone schists in the San Juan Mountains, Colorado.

   Jour. Geol., vol. 12, pp. 501–509, 1904.

   Describes the occurrence and character of greenstone schists in the San Juan Mountains, discusses their age, and compares them with similar rocks from other localities.

Hubbard (George D.).

1. An inter-Glacial valley in Illinois.

   Jour. Geol., vol. 12, pp. 152–160, 3 figs., 1904.

   Describes distribution of Illinoian and Wisconsin drift deposits in southern Illinois and various physiographic features of the Embarras Valley, and discusses its physiographic history.

Huntington (Ellsworth) and **Goldthwait** (James Walter).

1. The Hurricane fault in the Toquerville district, Utah.

   Harvard Coll., Mus. Comp. Zool., Bull., vol. 42 (Geol. Ser., vol. 6), pp. 199–259, pls. i-vii, figs. 1-13, 1904.

   Describes geographic and physiographic features of the region, the character and occurrence of the geologic formations, the geologic history, embracing deposition, uplift, folding, faulting, erosion, and vulcanism, and the occurrence and effects of lava flows.

Hyde (Jesse E.).

1. Changes in the drainage near Lancaster [Ohio].

   Ohio Naturalist, vol. 4, pp. 149–157, 4 figs., 1904.

   Discusses changes in drainage produced by the ice invasions of the Glacial period.

I.

Iddings (Joseph P.).

1. A fracture valley system.

   Jour. Geol., vol. 12, pp. 94–105, 1 pl., 1904.

   Discusses the relations subsisting between systems of drainage and fractures, and describes in illustration the drainage system and geologic structure of the Livingston Quadrangle, Folio 1 of the Geologic Atlas of the United States.

2. Quartz-feldspar-porphyry (graniphyro liparose-alaskose) from Llano, Texas.

   Jour. Geol., vol. 12, pp. 225–231, 1904.

   Describes petrographic characters and chemical composition, and discusses its position in the quantitative system of classification.

Irving (John Duer).

1. The ore deposits of the northern Black Hills.

   Mg. Rep., vol. 50, pp. 430–431, 1904.

   Describes the general geology and the occurrence, geologic relations, and character of the gold, silver, tin, and wolframite ore deposits.

2. Ore deposits of the northern Black Hills.

   U. S. Geol. Surv., Bull. no. 225, pp. 123–140, 1904.

   Describes the general geology and the character and occurrence of ore deposits, chiefly gold, lead-silver, and wolframite, in Algonkian, Cambrian, Carboniferous, and eruptive rocks.

Irving (John Duer)—Continued.

3. Microscopic structure and origin of certain stylolitic structures in limestone.

Abstract: Am. Geol., vol. 33, pp. 266–267, 1904; Science, new ser., vol. 19, p. 580, 1904.

Discusses the character and origin of stylolites.

Irving (John Duer) and **Emmons** (S. F.).

1. Economic resources of the northern Black Hills. Part II. Mining geology.

U. S. Geol. Surv., Professional Paper no. 26, pp. 43–222, 19 pls., 11 figs., 1904.

Describes the character, occurrence, and geologic relations of the gold, silver, copper, tin, and tungsten ores, and their economic development.

Ishikawa (S.).

1. Latest eruption of Colima volcano, Mexico. [In Japanese.]

Tokyo Geol. Soc., Jour., vol. 11, pp. 98–103, 1904.

J.

Jackson (Robert T.).

1. Charles Emerson Beecher.

Am. Nat., vol. 38, pp. 407–426, 1 pl. (por.), 1904.

Gives an account of his life and work, and a list of his published papers.

Jacobs (E.).

1. The coal fields of Crow's Nest Pass, British Columbia.

Eng. Mag., vol. 27, pp. 36–57, ill., 1904.

Describes the location of the field, the occurrence of the coal, and the mining operations.

Jaggar (Thomas Augustus, jr.).

1. Economic resources of the northern Black Hills. Part I. General geology.

U. S. Geol. Surv., Professional Paper no. 26, pp. 13–41, 1 pl., 5 figs., 1904.

Describes topography, stratigraphy, lithology, geologic structure, and characteristic sections.

2. The eruption of Mount Pelée, 1851.

Am. Nat., vol. 38, pp. 51–73, 1904.

Translated from the French of LePrieur, Peyraud and Rufz.

3. The initial stages of the spine on Pelée.

Am. Jour. Sci., 4th ser., vol. 17, pp. 34–40, figs. 1–3, 1904.

Describes occurrence and appearance of spines in the crater of Mont Pelé and gives an explanation of their origin.

4. The eruption of Pelée, July 9, 1902.

Pop. Sci. Monthly, vol. 64, pp. 219–231, figs. 1–3, 1904.

Gives details of observations on the eruption of July 9, 1902, and discusses the causes of the phenomena.

Jeffrey (Edward C.).

1. A fossil Sequoia from the Sierra Nevada.

Bot. Gaz., vol. 28, pp. 321–332, 1904.

Jennings (E. P.).

1. The copper deposits of the Kaibab Plateau, Arizona.

   Am. Inst. Mg. Engrs., Trans., vol. 34, pp. 839–841, 1904.

   See no. 639 of the Bibliography for 1903, U. S. Geol. Surv., Bull. no. 240.

2. Origin of the magnetic iron ores of Iron County, Utah.

   Am. Inst. Mg. Engrs., Trans. (Atlantic City meeting, February, 1904), 5 pp., 1904 [advance separate].

   Describes the occurrence and character of the magnetic iron ore deposits and discusses their origin.

Jennison (W. F.).

1. Notes on the history of manganese mining in part of Nova Scotia and on some of the geological conditions of the manganese belt running through Hants County.

   Nova Scotia Mg. Soc., Jour., vol. 8, pp. 106–109, 1904.

   Discusses the occurrence and geologic relations of the manganese ore deposits.

Johnson (Charles W.).

1. Description of two new Tertiary fossils.

   Nautilus, vol. 17, pp. 143–144, 2 figs., 1904.

Johnson (C. W.) and **Grabau** (A. W.).

1. A new species of Clavilithes from the Eocene of Texas.

   Phila. Acad. Nat. Sci., Proc., vol. 53, pp. 602–603, 2 figs., 1902.

Johnson (L. C.) and **Eckel** (E. C.).

1. Notes on wells, springs, and general water resources of Mississippi.

   U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 102, pp. 332–357, 1904.

Johnson (Willard D.).

1. The profile of maturity in Alpine glacial erosion.

   Jour. Geol., vol. 12, pp. 569–578, 1904.

   Discusses physiographic characteristics due to glacial erosion of the Sierra Nevada Mountains, and the agencies by which they were produced.

Joly (Henri).

1. Notice sur le Dr. Professor Charles Othoniel Marsh (29 octobre 1831–18 mars 1899).

   Angers, Bull. de la Soc. d'Étud. Sci., new ser., vol. 30, pp. 114–117, 1901.

Jones (Fayette Alexander).

1. New Mexico mines and minerals. World's Fair edition, 1904.

   Santa Fe, N. M., The New Mexican Printing Company, 1904. 349 pp., 50 figs.

   Includes a brief account of the general geology, and observations on the occurrence, geologic relations, and character of various ore deposits, mining and production of metals, etc. Gives a list of minerals occurring in New Mexico.

Jones (T. Rupert).

1. Note on a Paleozoic Cypridina from Canada.

   Geol. Mag., dec. 5, vol. 1, pp. 438–439, 1 fig., 1904.

   Describes a new species under the name Cypridina antiqua.

Julien (Alexis A.).

1. The occlusion of igneous rock within metamorphic schists.

Abstract: Am. Geol., vol. 33, p. 268, 1904; Science, new ser., vol. 19, p. 581, 1904.
Defines the term "occlusion" and discusses some of the phenomena of occluded igneous rocks.

K.

Kain (Samuel W.).

1. Recent earthquakes in New Brunswick.

New Brunswick Nat. Hist. Soc., Bull., vol. 5, pp. 243–245, 1904.

Kay (George F.).

1. The Abitibi region [Ontario].

Ont. Bur. Mines, Rept., 1904, pt. 1, pp. 104–121, 4 pls., 1904.
Includes observations upon the geology, topography, drainage, etc., of the region traversed, and a discussion of the petrography.

Keeley (Frank J.).

1. Inclusions in quartz.

Phila. Acad. Nat. Sci., Proc., vol. 55, p. 700, 1904.

Keith (Arthur).

1. Recent zinc mining in east Tennessee.

U. S. Geol. Surv., Bull. no. 225, pp. 208–213, 1904.
Describes the general geology, character, occurrence, and origin of the zinc ore deposits.

2. Asheville folio, North Carolina-Tennessee.

U. S. Geol. Surv., Geol. Atlas of U. S., folio no. 116, 1904.
Describes the geographic relations and drainage, the geologic history, the character, occurrence, and relations of Archean, Algonkian (?), Cambrian, and Ordovician rocks, the geologic structure, and the mineral resources of the area.

3. Folded faults of the southern Appalachians.

Congr. géol. intern., Compte rendu IX. Sess., pp. 541–545, 1904.
Discusses the character and occurrence of overthrust faulting in the southern Appalachian region.

Kemp (James Furman).

1. Ores from igneous magmas.

Eng. & Mg. Jour., vol. 77, p. 675, 1904.

2. Graphite in the eastern Adirondacks, N. Y.

U. S. Geol. Surv., Bull. no. 225, pp. 512–514, 1904.
Describes occurrence and character of deposits of graphite.

3. The formation of veins: a brief statement of general principles.

Mg. Mag., vol. 10, pp. 89–93, 1904.
Discusses the general principles of ore deposition.

4. A handbook of rocks for use without the microscope. With a glossary of the names of rocks and of other lithological terms. Third edition, revised.

New York, D. Van Nostrand Company, 1904. 238 pp., 41 figs.

Kemp (James Furman)—Continued.

5. Platinum in the Rambler mine, Wyoming.

U. S. Geol. Surv., Min. Res. for 1902, pp. 244–250, 1 pl., 1904.

Describes the occurrence of platinum in the ores of the Rambler mine, the geology of the vicinity, and the character and occurrence of the ore bodies.

Kemp (J. F.), **Finlay** (George I.) and

1. Nepheline syenite area of San José, Tamaulipas, Mexico.

See Finlay (George I.) and Kemp (J. F.), 1.

Kessler (H. H.) and **Hamilton** (W. R.).

1. The orbicular gabbro of Dehesa, California.

Am. Geol., vol. 34, pp. 133–140, 5 pls., 1904.

Describes the occurrence, geologic relations, megascopic and microscopic characters, and constitution.

Keyes (Charles Rollin).

1. Note on block mountains in New Mexico.

Am. Geol., vol. 33, pp. 19–23, 1904.

Discusses structure and formation of block mountains in New Mexico.

2. Bolson plains and the conditions of their existence.

Am. Geol., vol. 34, pp. 160–164, 1904.

Describes the characters of bolson plains and discusses their origin.

3. Remarkable occurrence of aurichalcite.

Iowa Acad. Sci., Proc. for 1903, vol. 11, p. 253, 1904.

Describes an occurrence of aurichalcite in the Magdalena Mountains in New Mexico.

4. Certain basin features of the high plateau region of southwestern United States.

Iowa Acad. Sci., Proc. for 1903, vol. 11, pp. 254–257, 1904.

Describes features of bolson plains of New Mexico, and discusses their origin.

5. Note on the Carboniferous faunas of Mississippi Valley in the Rocky Mountain region.

Iowa Acad. Sci., Proc. for 1903, vol. 11, pp. 258–259, 1904.

Notes the identity of many of the fossils from the two regions, although they have been described under different names.

6. Iron deposits of the Chupadera Mesa [New Mexico].

Eng. & Mg. Jour., vol. 78, p. 632, 1 fig., 1904.

Describes the occurrence and geologic relations of iron ores in central New Mexico and explains their origin.

7. The Hagan coal field [New Mexico].

Eng. & Mg. Jour., vol. 78, pp. 670–671, 3 figs., 1904.

Describes the occurrence and geologic relations of coal beds in central New Mexico.

8 Unconformity of the Cretaceous on older rocks in central New Mexico.

Am. Jour. Sci., 4th ser., vol. 18, pp. 360–362, 2 figs., 1904.

Describes the relations of the Cretaceous rocks to the underlying formations. Includes a table giving a general geological section for New Mexico, showing the sequence, thickness, and lithologic character of the geologic formations.

Kindle (Edward M.).

1. A series of gentle folds on the border of the Appalachian System.

Jour. Geol., vol. 12, pp. 281-289, 1 fig., 1904.

Describes the occurrence and character of anticlinal folds in the Watkins Glen quadrangle in southern New York.

2. Note on some concretions in the Chemung of southern New York.

Am. Geol., vol. 33, pp. 360-363, 3 figs., 1904.

Describes the occurrence in the Chemung of a bed of concretions in connection with a fossiliferous band and gives an explanation of their origin.

3. The stratigraphy and paleontology of the Niagara of northern Indiana.

Ind., Dept. Geol. & Nat. Res., 28th Ann. Rept., pp. 397-486, 28 pls., 1904.

Kindle (Edward M.) and **Breger** (C. L.).

1. Paleontology of the Niagara of northern Indiana.

Ind., Dept. Geol. & Nat. Res., 28th Ann. Rept., pp. 428-486, 28 pls., 1904.

Kinney (Bryce A.).

1. Annual report of the State natural-gas supervisor.

Ind., Dept. Geol. & Nat. Res., 28th Ann. Rept., pp. 357-375, 1904.

Kinzie (Robert A.).

1. The Treadwell group of mines, Douglas Island, Alaska.

Am. Inst. Mg. Engrs., Trans., vol. 34, pp. 334-386, 14 figs., 1904.

See no. 690 of the Bibliography for 1903, U. S. Geol. Surv., Bull. no. 240.

Kirby (Edmund B.).

1. The ore deposits of Rossland, British Columbia.

Mg. Rep., vol. 50, pp. 326-328, 3 figs., 1904. Mg. & Sci. Press, vol. 88, pp. 331, 347, 1904. Can. Mg. Rev., vol. 23, pp. 60-64, 1904. Can. Mg. Inst., Jour., vol. 7 (advance separate, 23 pp., 4 pls., 1904).

Describes the geologic occurrence, relations to surrounding rocks, and character of the gold, silver, and copper ore deposits of this locality.

Kirk (Charles Townsend).

1. A preliminary report on the contact of the Permian with the Pennsylvanian in Oklahoma.

Okla., Dept. Geol. & Nat. Hist., 3d Bien. Rept., pp. 5-14, 1904.

Describes physiography of the region examined, the occurrence, character, and economic products of Carboniferous strata in Oklahoma and their differentiation into Pennsylvanian and Permian.

Kirk (M. P.) and **Malcolmson** (J. W.).

1. A new quicksilver mining district [Texas].

Eng. & Mg. Jour., vol. 77, pp. 685-686, 1 fig., 1904.

Describes occurrence, character, geologic relations, and economic development of quicksilver ore deposits in Texas.

Klein (Carl).

1. Über die am 7. Mai 1902 vom Vulcan Soufrière auf St. Vincent ausgeworfene vulcanische Asche.

Sitzungsb. d. k. preus. Akad. d. Wiss., pp. 993-994, 1902.

Describes the fall of volcanic ash in St. Vincent and its composition.

Klein (Carl)—Continued.

2. Über das Meteoreisen von Persimmon Creek, bei Hot House, Cherokee Co., Nord-Carolina.

K. preus. Akad. d. Wiss., Sitzungsb., p. 557, 1904.

Describes characters of this meteorite.

Klem (Mary J.).

1. A revision of the Paleozoic Paleechinoidea, with a synopsis of all known species.

St. Louis Acad. Sci., Trans., vol. 14, pp. 1–98, 6 pls., 1904.

Knapp (George N.).

1. Underground waters of New Jersey. Wells drilled in 1903.

N. J. Geol. Surv., Ann. Rept. for 1903, pp. 73–93, 2 pls., 1904.

Describes extent and character of the physiographic provinces of New Jersey and their water supply, and gives data regarding wells drilled in 1903.

2. The Cliffwood clays and the Matawan.

Am. Geol., vol. 33, pp. 23–27, 1904.

Discusses stratigraphic position of the formations occurring at Cliffwood, N. J.

Knapp (George N.), **Kümmel** (Henry B.) and.

1. The stratigraphy of the New Jersey clays.

See Kümmel (Henry B.) and Knapp (George N.), 1.

Knight (C. W.).

1. Notes on some deposits in the eastern Ontario gold belt.

Can. Mg. Inst. Jour., vol. 7. Advance separate, 36 pp., 12 figs., 1904.

Describes the general geology of the district, and in detail the occurrence and character of the gold ore deposits and associated rocks of the Belmont and Star of the East gold mines, and discusses their origin.

Knight (Nicholas).

1. The dolomites of eastern Iowa.

Am. Geol., vol. 34, pp. 64–66, 1904; Geol. Mag., dec. 5, vol. 1, pp. 493–495, 1904.

Describes investigations upon the composition of dolomites.

2. Some features in the analysis of dolomite rock.

Iowa Acad. Sci., Proc. for 1903, vol. 11, pp. 127–131, 1904.

Describes composition of examples of dolomite rock from the Niagara of Iowa.

Knight (Wilbur C.).

1. Gypsum deposits in Wyoming.

U. S. Geol. Surv., Bull. no. 223, pp. 79–85, 1 pl., 2 figs, 1904.

Describes character, extent, occurrence, economic development, and geologic relations of the gypsum deposits occurring in the Red Beds in Wyoming.

Knowlton (Frank Hall).

1. Fossil plants from Kukak Bay [Alaska].

Harriman Alaska Expedition, vol. 4, pp. 149–162, 12 pls., 1904.

2. Fossil floras of the Yukon.

Abstract: Science, new ser., vol. 19, pp. 733–734, 1904.

Kraus (Edward H.).

1. A new exposure of serpentine at Syracuse, N. Y.

Am. Geol., vol. 33, pp. 330–332, 1904.

Describes occurrence, character, and relations to other dike exposures.

2. The occurrence of celestite near Syracuse, N. Y., and its relation to the vermicular limestones of the Salina epoch.

Am. Jour. Sci., 4th ser., vol. 18, pp. 30–39, 4 figs., 1904.

3. Some interesting mineral occurrences in the Salina epoch.

Abstract: Science, new ser., vol. 19, pp. 619–620, 1904.

Describes occurrence of hematite and celestite.

4. See Fairchild (H. L.), 4.

Krebs (Wilhelm).

1. Flutschwankungen und die vulkanischen Ereignisse in Mittelamerika.

Globus, Bd. 84, pp. 72–74, 1903.

Discusses connection between high tides in the Pacific Ocean and the volcanic activity in Central America in 1902.

Kümmel (Henry B.).

1. Administrative report of the State geologist.

N. J. Geol. Surv., Ann. Rept. for 1903, pp. xiii–xxxvi, 1904.

Outlines the work of the New Jersey Geological Survey for the year ended October 31, 1903.

Kümmel (Henry B.) and **Knapp** (George N.).

1. The stratigraphy of the New Jersey clays.

N. J. Geol. Surv., vol. 6, pp. 117–209, 10 pls., 1904.

Describes the occurrence and geologic relations of clays of Pleistocene, Tertiary, Cretaceous, and older systems of New Jersey.

Kunz (George F.).

1. Gem minerals of southern California.

Abstract: Science, new ser., vol. 19, pp. 107–108, 1904.

Describes the occurrence and characters of some gem minerals recently discovered.

2. Clackamas meteoric iron.

Abstract: Science, new ser., vol. 19, p. 108, 1904.

Describes the occurrence and characters of a meteoric mass recently discovered.

L.

Lacroix (A.).

1. La Montagne Pelée et ses éruptions.

Paris, Masson et Cie., 1904. xxii, 662 pp., 30 pls. and 238 figs., 4to.

Gives a full account of the volcanic phenomena connected with the eruptions of La Montagne Pelée in 1902.

La Forge (Lawrence), **Crosby** (W. O.) and.

1. Notes on the wells, springs, and general water resources of Massachusetts.

See Crosby (W. O.) and La Forge (Lawrence), 1.

Lakes (Arthur).

1. Gypsum deposits in Colorado.

   U. S. Geol. Surv., Bull. no. 223, pp. 86–88, 2 figs., 1904.

   Describes character, occurrence, and economic development of the gypsum deposits of Colorado.

2. The coal fields of Colorado.

   Colo. Sch. Mines, Bull., vol. 2, no. 2, pp. 11–23, 2 figs., 1904.

   Describes the formation of the coal, the location, character, and geologic age of the coal fields and the character and occurrence of the coals.

3. Field notes concerning ore shoots and the influence of downhill pressure on the outcrop of veins.

   Mines & Minerals, vol. 25, pp. 92–93, 6 figs., 1904.

4. Grand Encampment copper district of Wyoming. Some notes on the geology, and a description of some of the development work.

   Mines & Minerals, vol. 25, pp. 200–201, 2 figs., 1904.

5. The Yampa coal fields. A description of the anthracite, bituminous and lignite field traversed by the Moffatt Road in Routt County, Colorado.

   Mines & Minerals, vol. 24, pp. 249–251, 4 figs., 1904.

   Describes the occurrence, character, and geologic relations of the coal beds.

6. The Book Cliff coal mines. Coal seams near Grand Junction, Colorado, which exhibit interesting peculiarities in their locations and formations.

   Mines & Minerals, vol. 24, pp. 289–291, 4 figs., 1904.

   Describes the occurrence, character, geologic relations, and economic development of these coal beds.

7. A trip through Arizona. Interesting desert scenery and the relation it bears to the geology and mining interests of the region.

   Mines & Minerals, vol. 24, pp. 356–358, 4 figs., 1904.

   Gives observations on the physiography and geology of parts of Arizona.

8. Tonopah mining camp. Some notes on its location, the geological formations of the region, and the mines in operation.

   Mines and Minerals, vol. 24, pp. 479–481, 1904.

9. Mines and scenery. A typical Nevada mining region situated in the bottom of an ancient dried up lake bed.

   Mines & Minerals, vol. 24, pp. 552–553, 3 figs., 1904.

   Gives observations upon the physiography and geology of a part of western Nevada.

10. Schists and slates as ore carriers.

    Mg. & Sci. Press, vol. 88, pp. 161–162, 1904.

    Discusses the occurrence of ore deposits.

11. Ore in anticlinals, as at Bendigo, Australia, and Tombstone, Arizona.

    Mg. & Sci. Press, vol. 88, p. 193, 1904.

Lakes (Arthur)—Continued.

12. The Lone Mountain district, near Tonopah, Nevada.

Mg. & Sci. Press, vol. 88, pp. 246–247, 6 figs., 1904.

Describes physiographic and geologic features of the region and the occurrence of silver-ore deposits.

13. Some of the ore deposits of Colorado.

Mg. & Sci. Press, vol. 88, pp. 377–378, 6 figs., 1904.

Describes the character and occurrence of some ore deposits.

14. Ore shoots and veins that do not come to the surface.

Mg. Rep., vol. 50, pp. 55–56, 2 figs., 1904.

Describes occurrences of ore bodies.

15. Organic remains in ore deposits.

Mg. Rep., vol. 50, pp. 113–114, 1904.

16. Ore deposition in the cement of rocks.

Mg. Rep., vol. 50, p. 140, 1904.

17. Volcanic craters and ore deposits.

Mg. Rep., vol. 50, pp. 216–217, 1904.

18. Shear zones or zones of impregnation vs. true quartz fissure veins.

Mg. Rep., vol. 50, pp. 295–296, 1904.

Discusses the character of veins containing ore deposits.

19. Epitome of geologic literature.

Mg. Rep., vol. 50, pp. 615–617, 1904.

Gives abstracts of papers by Gardner F. Williams on the genesis of the diamond, I. E. Todd on the geology of South Dakota, Arthur C. Spencer on the geology of the Treadwell ore deposits, Douglas Island, Alaska, and Waldemar Lindgren on the genesis of the copper deposits of Clifton, Morenci, Arizona.

Lambe (Lawrence M.).

1. On Dryptosaurus incrassatus (Cope), from the Edmonton series of the Northwest Territory.

Can. Geol. Surv., Contr. Can. Pal., vol. 3, pt. 3, pp. 1–27, 8 pls., 2 figs., 1904.

2. The grasping power of the manus of Ornithomimus altus, Lambe.

Ottawa Nat., vol. 18, pp. 33–36, 2 pls., 1904. Abstract: Science, new ser., vol. 19, p. 254, 1904.

3. On the squamoso-parietal crest of two species of horned dinosaurs from the Cretaceous of Alberta.

Ottawa Nat., vol. 18, pp. 81–84, 2 pls., 1904.

4. On the squamoso-parietal crest of the horned dinosaurs Centrosaurus apertus and Monoclonius canadensis from the Cretaceous of Alberta.

Can. Roy. Soc., Trans., 2d ser., vol. 10, sect. 4, pp. 3–12, 2 pls., 1904.

5. The progress of vertebrate paleontology in Canada.

Can. Roy. Soc., Trans., 2d ser., vol. 10, sect. 4, pp. 13–56, 1904.

Gives a review of work upon vertebrate fossils discovered in Canada, with a list of Canadian species occurring in each of the systems of the geological scale, and a list of papers containing references to these species.

Lambert (Avery E.).

1. Description of Dalmanites lunatus.

Geol. Soc. Am., Bull., vol. 15, pp. 480–482, 1 pl., 1904.

Lane (Alfred C.).

1. The theory of copper deposition.

Mich. Miner, vol. 6, no. 2, pp. 9–11, no. 3, pp. 9–11, 1904. Am. Geol., vol. 34, pp. 297–309, 1 fig., 1904.

Discusses the theory of copper deposition with especial reference to the copper ore deposits of the Lake Superior region.

2. The science of raw materials.

Mich. Miner, vol. 6, no. 4, pp. 9–11, 1904.

Discusses scope and utility of economic geology.

3. Building and road materials.

Mich. Miner, vol. 6, no. 5, pp. 9–12, no. 6, pp. 9–11, 1904.

Gives notes on the occurrence, character, and use of materials for Portland cement and cement brick manufacture, and road making.

4. Recent explorations for oil and gas. Advance sheets from the Annual Report of State geologist, 1904 [Michigan].

Mich. Miner, vol. 6, no. 8, pp. 9–12, no. 9, pp. 9–13, 1904.

Includes records of borings and discussion of the strata passed through.

5. The rôle of possible eutectics in rock magmas.

Jour. Geol., vol. 12, pp. 83–93, 1 fig., 1904.

Discusses the quantitative classification of igneous rocks.

6. Magnetic phenomena around deep borings.

Mich. Acad. Sci., 4th Rept., pp. 166–167, 1904.

7. Our underground wealth. Michigan clay, shales, and paving materials.

The Gateway, vol. 1, no. 6, pp. 49–51, 1904.

Discusses the occurrence and utilization of clays and shales for paving material.

8. Gold near Lake Superior.

The Gateway, vol. 3, no. 3, pp. 30–32, 1904.

Gives observations upon the geology along the international boundary and the occurrence and mining of gold ores in Ontario and Michigan.

9. Historical review of the geology of Michigan.

Mich. Acad. Sci., 5th Ann. Rept., pp. 184–195, 1904.

Gives a review of the investigations upon the geology of Michigan, a general outline of the geological structure and stratigraphy of the state, and a list of publications bearing upon the geology of the state.

Lasswitz (Rudolf).

1. Die Kreide-Ammoniten von Texas. (Collectio F. Roemer.)

Geol. und Pal. Abh. (Koken), N. F., Bd. 6, Heft 4, 40 pp., 8 pls., 1904.

Gives systematic descriptions of Cretaceous ammonites from Texas, a graphic section of strata at Austin, and correlation tables of Cretaceous formations.

Lawson (Andrew C.).

1. The geomorphogeny of the upper Kern basin.

Cal. Univ., Dept. Geol., Bull., vol. 3, pp. 291-376, pls. 31-45, 1904.

Describes the occurrence and general petrographic characters of the rocks and the glaciation and physiographic features of the region, and discusses the origin of the latter.

2. The orbicular gabbro at Dehesa, San Diego Co., California.

Cal. Univ., Dept. Geol., Bull., vol. 3, pp. 383-396, 1 pl., 1904.

Describes the general geology of the region, the occurrence of the orbicular gabbro and its petrographic characters and composition.

Le Couppey de la Forest (Max).

1. Quelques grottes des Etats-unis d'Amerique.

Spelunca, t. 35, no. 35, pp. 3 (117)-21 (135), 2 figs., 1904.

Describes Mammoth and Colossal caves in Kentucky, Wyandotte Cave in Indiana, and Wind Cave and Grand Cavern in Colorado. Includes some account of the Carboniferous formations in which the caves occur.

Lee (Willis T.).

1. The underground waters of Gila Valley, Arizona.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 104, 68 pp., 5 pls., 9 figs., 1904.

Includes sections of wells showing thickness and character of strata passed through.

2. Age of the Atlantosaurus beds.

Abstract: Geol. Soc. Am., Bull., vol. 14, pp. 531-532, 1904.

See no. 785 of the U. S. Geol. Surv., Bull. no. 240.

3. See Fairchild (H. L.), 3.

Leffingwell (E. D. K.), **Capps** (S. R.) and.

1. Pleistocene geology of the Sawatch Range, near Leadville, Colo.

See Capps (S. R.) and Leffingwell (E. D. K.), 1.

Leith (Charles Kenneth).

1. Summaries of pre-Cambrian literature for 1902-1903.

Jour. Geol., vol. 12, pp. 52-62, 161-176, 1904.

2. The Lake Superior iron region during 1903.

U. S. Geol. Surv., Bull. no. 225, pp. 215-220, 1904.

Describes the geologic occurrence of the iron ore deposits in the different districts of the Lake Superior iron region.

3. Iron ores in southern Utah.

U. S. Geol. Surv., Bull. no. 225, pp. 229-237, 1904.

Describes distribution, geologic relations, and character of the iron ores and discusses their origin.

4. Lake Superior iron region in 1903.

Mg. World, vol. 21, pp. 198-200, 3 figs., 1904.

Includes observations on the general geology and the occurrence and character of the iron-ore deposits.

5. Rock cleavage.

U. S. Geol. Surv., Bull. no. 239, 216 pp., 27 pls., 1905.

Leverett (Frank).

1. The loess and its distribution.

Am. Geol., vol. 33, pp. 56–57, 1904.

2. Review of the Glacial geology of the southern Peninsula of Michigan.

Mich. Acad. Sci., 6th Rept., pp. 100–110, 1904.

Discusses the physical features of the southern peninsula, the possible extension of the Keewatin ice field over Michigan, evidences in Michigan of successive advances of the Labrador ice field, the location of the ice margin, structure of the drift in Michigan, Glacial lakes, origin of the Great Lakes, and gives a bibliography.

3. Glacial geology of the Grand Rapids area [Michigan].

Mich. Geol. Surv., vol. 9, pt. 2, pp. 56–59, 1904.

4. Glacial gravels [of the Kittanning quadrangle, Pennsylvania].

U. S. Geol. Surv., Geol. Atlas of U. S., folio no. 115, 1904.

Levison (W. G.).

1. Notes on fluorescent gems.

Am. Geol., vol. 33, pp. 57–58, 1904.

Lindgren (Waldemar).

1. Gypsum deposits in Oregon.

U. S. Geol. Surv., Bull. no. 223, p. 111, 1904.

Describes character, occurrence, economic development, and geologic relations of gypsum deposits in eastern Oregon.

2. A geological reconnaissance across the Bitterroot Range and Clearwater Mountains in Montana and Idaho.

U. S. Geol. Surv., Professional Paper no. 27, 123 pp., 15 pls., 8 figs., 1904.

Describes topography and drainage, character, occurrence, and geologic relations of igneous and sedimentary rocks of Quaternary, Tertiary, and pre-Tertiary age, the geologic structure and history of the area, the character and occurrence of gold, silver, copper, and lead ore deposits, and the mining developments.

3. The genesis of the copper deposits of Clifton-Morenci, Arizona.

Am. Inst. Mg. Engrs., Trans. (Lake Superior meeting, September, 1904), (advance separate), 40 pp., 1904. Abstract: Mg. Rep., vol. 50, p. 617, 1904; Mg. & Sci. Press, vol. 89, p. 438, 1904.

Describes the general geology, and the character and occurrence of copper ore deposits, and discusses their origin.

Lindgren (Waldemar) and **Drake** (N. F.).

1. Nampa folio, Idaho-Oregon.

U. S. Geol. Surv., Geol. Atlas of U. S., folio no. 103, 1904.

Describes the geography, the geologic history, the occurrence and character of Tertiary strata and igneous rocks and Quaternary deposits, and the economic resources, chiefly placer gold.

2. Silver City folio, Idaho.

U. S. Geol. Surv., Geol. Atlas of U. S., folio no. 104, 1904.

Describes geography, topography, and drainage, the general geologic history and structure, the character and occurrence of igneous rocks and sedimentary deposits of Tertiary and Quaternary age, and the economic resources, chiefly precious metals.

Lindgren (Waldemar) and **Hillebrand** (W. F.).

1. Minerals from the Clifton-Morenci district, Arizona.

Am. Jour. Sci., 4th ser., vol. 18, pp. 448–460, 2 figs., 1904.

Describes the occurrence, optical and other characters, and chemical composition of some minerals from copper deposits in Arizona.

Lindgren (Waldemar) and **Ransome** (Frederick Leslie).

1. Report of progress in the geological resurvey of the Cripple Creek district, Colorado.

U. S. Geol. Surv., Bull. no. 254, 36 pp., 1904.

Describes the general geology and the occurrence and character of the gold-ore deposits.

Lloyd (John Uri).

1. When did the American mammoth and mastodon become extinct?

Records of the Past, vol. 3, pp. 43–46, 1904.

Logan (W. N.).

1. Economic products of St. Lawrence County [New York].

N. Y. State Mus., 56th Ann. Rept., pp. r118–r124, 1904.

Describes the occurrence and production of economic products of this area.

2. Geology of Oktibbeha County [Mississippi].

Geological and Industrial Survey of Mississippi, Report 1, Miss. Agr. & Mech. Coll., Bull., vol. 1, no. 2, pp. 5–49, 6 pls., 5 figs., 1904.

Describes drainage, topography, and physiography, the character, occurrence, and relations of the Cretaceous, Tertiary, and Quaternary formations, and the economic resources of the county.

Loomis (F. B.).

1. Two new river reptiles from the Titanothere beds.

Am. Jour. Sci., 4th ser., vol. 18, pp. 427–429, 11 figs., 1904.

2. On some marine fossils in the Titanothere beds.

Abstract: Science, new ser., vol. 19, p. 254, 1904.

Loomis (F. B.), **Emerson** (B. K.) and.

1. On Stegomus longipes, a new reptile from the Triassic sandstones of the Connecticut Valley.

See Emerson (B. K.) and Loomis (F. B.), 1.

Louderback (George Davis).

1. Basin range structure of the Humboldt region [Nevada].

Geol. Soc. Am., Bull., vol. 15, pp. 289–346, 8 pls., 1904.

Describes the character, occurrence, and general relations of sedimentary and igneous rocks of the Basin ranges of western Nevada, particularly those of the Humboldt Lake mountains, and their geologic structure, discusses the mode of their formation and the evidences therefor, and gives an outline of the geologic history of the region.

2. Gypsum deposits in Nevada.

U. S. Geol. Surv., Bull. no. 223, pp. 112–118, 1 pl., 1 fig., 1904.

Describes character, occurrence, economic development, and geologic relations of gypsum deposits in northwestern Nevada.

Loughlin (G. F.), **Crosby** (W. O.) and.

1. A descriptive catalogue of the building stones of Boston and vicinity.

See Crosby (W. O.) and Loughlin (G. F.), 1.

Low (A. P.).

1. Report on an exploration of the east coast of Hudson Bay from Cape Wolstenholme to the south end of James Bay.

Can. Geol. Surv., Ann. Rept., new ser., vol. 13, 84 pp., 2 pls., and maps, 1903. (Published separately, 1902.)

Gives observations on the general geology, the occurrence and character of igneous, Archean, and Cambrian rocks, and economic resources of the area explored. Includes a list of Glacial striæ.

2. Report on the geology and physical character of the Nastapoka Islands, Hudson Bay.

Can. Geol. Surv., Ann. Rept., new ser., vol. 13, 31 pp., 4 pls., 1903.

Describes the general geology of the Nastapoka Islands, and gives detailed descriptions of the physical features and the geologic formation of each of the larger islands of the group.

Lucas (Frederic A.).

1. A new batrachian and a new reptile from the Trias of Arizona.

U. S. Nat. Mus., Proc., vol. 27, pp. 193–195, pls. iii–iv, 1904.

2. Paleontological notes. Pleurocœlus versus Astrodon. The armor of Zeuglodon.

Science, new ser., vol. 19, pp. 436–437, 1904.

3. The dinosaur Trachodon annectens.

Smith. Misc. Coll., vol. 45 (Quar. Issue, vol. 1, pts. 3 and 4), pp. 317–320, 2 pls., 4 figs., 1904.

Describes occurrence and characters of fossil remains, and restorations.

4. Eocene whales.

Nature, vol. 71, p. 102, 1904.

Note on the occurrence in Eocene deposits of southern United States of fossil remains which may throw light upon the ancestry of the whale.

Lull (Richard Swan).

1. Fossil footprints of the Juratrias of North America.

Boston Soc. Nat. Hist., Mem., vol. 5, pp. 461–557, 1 pl., 34 figs., 1904.

Reviews previous work upon fossil footprints, describes their geologic occurrence, gives a classification and systematic descriptions of genera, species, and higher groups.

2. Note on the probable footprints of Stegomus longipes.

Am. Jour. Sci., 4th ser., vol. 17, pp. 381–382, 1904.

3. Nature's hieroglyphics.

Pop. Sci. Mo., vol. 66, pp. 139–149, 8 figs., 1904.

Gives a general account of the footprints in the Triassic rocks of the Connecticut Valley and of the animals by which they were made.

Lunt (Horace F.).

1. The copper deposits of the Kaibab Plateau, Arizona.

Am. Inst. Mg. Engrs., Trans., vol. 34, pp. 989–990, 1904.

Describes the occurrence and character of copper deposits in this region.

Luquer (Lea McI.).

1. Bedford cyrtolite.

Am. Geol., vol. 33, pp. 17–19, 1904.

Describes occurrence of this mineral at Bedford, New York, and its characters. Appends a list of additional minerals collected from this locality.

2. Ramosite not a mineral.

Am. Jour. Sci., 4th ser., vol. 17, pp. 93–94, 1904.

Shows from analysis and structure that ramosite is a basic scoria and not a mineral.

Luquer (Lea McI.), **Moses** (Alfred J.) and.

1. Notes on recent mineralogical literature.

See Moses (Alfred J.) and Luquer (Lea McI.), 1.

Luther (D. Dana), **Clarke** (John M.) and.

1. Stratigraphic and paleontologic map of Canandaigua and Naples quadrangles.

See Clarke (John M.) and Luther (D. Dana), 1.

Lyman (Benjamin Smith).

1. Biographical notice of J. Peter Lesley.

Abstract: Am. Inst. Mg. Engrs., Trans., vol. 34, pp. 726–739, 1904.

See no. 822 of the Bibliography for 1903, U. S. Geol. Surv., Bull. no. 240.

2. Lodel Creek and Skippack Creek.

Phila. Acad. Nat. Sci., Proc., vol. 53, pp. 604–607, 1902.

Describes the occurrence of ripple marks, footprints, etc., in shales of the New Red in southeastern Pennsylvania.

M.

McCalley (Henry), **Smith** (Eugene Allen) and.

1. Index to the mineral resources of Alabama.

See Smith (Eugene Allen) and McCalley (Henry), 1.

McCallie (S. W.).

1. Notes on the wells, springs, and water resources of Georgia.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 102, pp. 207–237, 1904.

2. A preliminary report on the coal deposits of Georgia.

Ga. Geol. Surv., Bull. no. 12, 121 pp., 14 pls., 60 figs., 1904.

Describes the general geology and topography of the northwestern part of Georgia, the geologic structure of the coal fields of that region, the character and occurrence of the coal beds, and the composition of the coals, and in detail the coal deposits and mining developments of Walker, Chattooga, and Dade counties.

Macallum (A. B.).

1. The paleochemistry of the ocean in relation to animal and vegetable protoplasm.

Can. Inst., Trans., vol. 7. pp. 535–562, 1904.

Discusses the relative abundance of certain chemical elements in sea water at present and in remote geological ages, and the origin of the physiological relation of the chemical elements in blood plasma.

McCarn (H. L.).

1. The Planet copper mines [Arizona].

Eng. & Mg. Jour., vol. 78, pp. 26–27, 1 fig., 1904.

Describes the general geology and the occurrence and character of copper ores on Big Williams Fork, Arizona.

McConnell (R. G.) and **Brock** (R. W.).

1. Report on the great landslide at Frank, Alberta.

Can., Dept. Int., Ann. Rept. for 1902–1903, pt. 8, App., 17 pp., 16 pls., 1904.

Describes the general geology of Turtle Mountain, and in detail the slide of April 29, 1903, and discusses its cause.

McEvoy (James).

1. Notes on the special features of coal mining in the Crow's Nest, B. C.

Can. Mg. Inst., Jour., vol. 7 (Advance separate, 5 pp., 1904); Can. Mg. Rev., vol. 23, p. 51, 1904; Eng. & Mg. Jour., vol. 77, pp. 601–602, 1904.

Discusses the geologic occurrence and character of the coals of this field.

McGregor (J. H.).

1. The relationships of the Phytosauria.

Abstract: Science, new ser., vol. 19, pp. 254–255, 1904.

McKee (G. W.).

1. Prismatic crystals of hematite.

Am. Jour. Sci., 4th ser., vol. 17, pp. 241–242, 1 fig., 1904.

Describes the crystallographic characters.

Macco (Albr.).

1. Die Eisenerzlagerstätten am Lake Superior.

Zeit. f. prak. Geol., Jahrg. 12, pp. 48–53, 377–399, 12 figs., 1904.

Describes general geology, and occurrence and character of the iron-ore deposits.

Malcolmson (J. W.), **Kirk** (M. P.) and.

1. A new quicksilver mining district.

See Kirk (M. P.) and Malcolmson (J. W.), 1.

Mallery (Willard).

1. Native gold in igneous rocks.

Eng. & Mg. Jour., vol. 77, p. 596, 1904.

Describes the occurrence of native gold in Oregon.

Manson (Marsden).

1. The evolution of climate.

Abstract: Science, new ser., vol. 20, pp. 801–802, 1904.

Marbut (C. F.).

1. Recent studies in the physiography of the Ozark region in Missouri.

   Abstract: Science, new ser., vol. 19, p. 527, 1904.

2. Geology and physiography [of Missouri].

   The State of Missouri, pp. 63–70, ill. (incl. geol. map), 1904.

   Describes the physiographic features and general geology of the State of Missouri.

Marsters (W. F.).

1. A preliminary report on a portion of the serpentine belt of Lamoille and Orleans counties [Vermont].

   Vt. Geol. Surv., Rept. State Geol., IV, pp. 86–102, 1 pl., 2 figs., 1904.

   Describes the occurrence and relations of asbestos to surrounding rocks, and discusses the character and origin of the serpentine.

Martin (G. C.).

1. Petroleum fields of Alaska and the Behring River coal fields.

   U. S. Geol. Surv., Bull. no. 225, pp. 365–382, 1904.

   Describes the location, general geology, and structure of the petroleum fields and the Behring River coal field, and the character and occurrence of the petroleum and coal.

2. Systematic paleontology of the Miocene deposits of Maryland: Malacostraca and Cirrepedia.

   Md. Geol. Surv., Miocene, pp. 94–97, 2 pls., 1904.

3. Systematic paleontology of the Miocene deposits of Maryland: Mollusca, except Pelecypoda.

   Md. Geol. Surv., Miocene, pp. 130–274, 16 pls., 1904.

4. Systematic paleontology of the Miocene deposits of Maryland: Brachiopoda.

   Md. Geol Surv., Miocene, pp. 402–404, 1 pl., 1904.

5. Systematic paleontology of the Miocene deposits of Maryland: Vermes.

   Md. Geol. Surv., Miocene, p. 430, 1 pl., 1904.

6. Systematic paleontology of the Miocene deposits of Maryland: Radiolaria.

   Md. Geol. Surv., Miocene, pp. 447–459, 2 pls., 1904.

Maso (Saderra).

1. Volcanoes and seismic centers of the Philippine Archipelago.

   U. S. Dept. Commerce and Labor, Census of the Philippine Islands, Bull. 3, 80 pp., ill., 1904.

   Describes briefly the distribution of active and dormant volcanoes, the occurrence and character of the volcanic rocks, the general geology, and in detail the seismic activity in the islands.

Mathews (Edward Bennett).

1. The structure of the Piedmont Plateau as shown in Maryland.

Am. Jour. Sci., 4th ser., vol. 17, pp. 141-159, 249, 1 pl., 2 figs., 1904.

Discusses the character and occurrence of the rocks, reviews the explanations by previous writers of the geologic structure and describes in detail the structural features of the Piedmont Plateau.

Matson (George C.).

1. A contribution to the study of the inter-Glacial gorge problem.

Jour. Geol., vol. 12, pp. 133-151, 2 pls., 6 figs., 1904.

Describes physiographic features of the Finger Lake region of New York and discusses the origin of the gorges in the streams of that region.

Matthes (Francois E.).

1. The Alps of Montana.

Appalachia, vol. 10, pp. 255-276, 4 pls., 1904.

Contains observations on the physiography, general geology, glaciers, and glaciation in the Rocky Mountain region of Montana.

2. The significance of U-shaped glacier and stream channels.

Abstract: Science, new ser., vol. 19, pp. 856-857, 1904.

Matthew (G. F.).

1. An attempt to classify Paleozoic batrachian footprints.

Can. Roy. Soc., Proc. & Trans., 2d ser., vol. 9, sect. 4, pp. 109-121, 3 pls., 1903.

Discusses generic terms proposed for Paleozoic batrachian footprints, and gives a classification in tabular form of genera and species hitherto described.

2. Note on Oliver's cave.

New Brunswick Nat. Hist. Soc., Bull., vol. 5, pp. 171-174, 1 pl., 1904.

Describes the cave and discusses its origin and age.

3. Notes on Cambrian faunas, no. 9: Protolenus.

New Brunswick Nat. Hist. Soc., Bull., vol. 5, p. 246, 1904.

4. Note on the genus Hylopus of Dawson.

New Brunswick Nat. Hist. Soc., Bull., vol. 5, pp. 247-252, 1 fig., 1904.

5. Physical aspect of the Cambrian rocks in eastern Canada, with a catalogue of the organic remains found in them.

New Brunswick Nat. Hist. Soc., Bull., vol. 5, pp. 253-278, 1904.

Describes the occurrence and character of Cambrian rocks and gives a table of the fossils occurring in them, showing place of publication, locality, and horizon.

Matthew (W. D.).

1. A complete skeleton of Merycodus.

Am. Mus. Nat. Hist., Bull., vol. 20, pp. 101-129, 1 pl. and 21 figs., 1904.

2. Notice of two new Oligocene camels.

Am. Mus. Nat. Hist., Bull., vol. 20, pp. 211-215, 1904.

3. The arboreal ancestry of the mammalia.

Am. Nat., vol. 38, pp. 811-818, 1904.

Matthew (W. D.)—Continued.

4. Exhibition of the series of foot bones illustrating the evolution of the camel, recently installed in the Hall of Vertebrate Paleontology of the American Museum of Natural History.

   Abstract: Science, new ser., vol. 19, p. 892, 1904.

5. Outlines of the continents in Tertiary times.

   Abstract: Am. Geol., vol. 33, pp. 268–269, 1904; Science, new ser., vol. 19, pp. 581–582, 1904.

Matthew (W. D.) and **Gidley** (J. W.).

1. New or little known mammals from the Miocene of South Dakota. American Museum expedition of 1903.

   Am. Mus. Nat. Hist., Bull., vol. 20, pp. 241–268, 15 figs., 1904.
   Describes occurrence, character, origin, and faunal contents of Loup Fork beds of South Dakota, and gives systematic descriptions of vertebrate fossils from these beds.

Maxwell (Henry V.).

1. Tennessee iron ores.

   Eng. & Mg. Jour., vol. 78, p. 742, 1904.
   Describes the occurrence, character, and geologic relations of iron-ore deposits in eastern Tennessee.

Merriam (John C.).

1. The John Day fossil beds [Oregon].

   Harper's Monthly Magazine, vol. 102, pp. 581–590, 8 figs., 1901.
   Describes the general geology and the occurrence of vertebrate fossils.

2. A note on the fauna of the lower Miocene in California.

   Cal. Univ., Dept. Geol., Bull., vol. 3, pp. 377–381, 1904.
   Describes the character and occurrence of faunas in different beds of Miocene age in California.

3. A new marine reptile from the Triassic of California.

   Cal. Univ., Dept. Geol., Bull., vol. 3, pp. 419–421, 1 fig., 1904.
   Describes Thalattosaurus alexandræ new genus and species.

4. Primitive characters of the Triassic ichthyosaurs.

   Abstract: Geol. Soc. Am., Bull., vol. 14, p. 536, 1904.
   See no. 885 of the U. S. Geol. Surv., Bull. no. 240.

Merrill (Frederick J. H.).

1. [Administrative] 56th report of the director of the State Museum and 22d of the State geologist [New York].

   N. Y. State Mus., 56th Ann. Rept., pp. r5–r177, 1904.

Merrill (George P.).

1. The non-metallic minerals, their occurrence and uses.

   New York, John Wiley & Sons. 414 pp., 32 pls., 28 figs., 1904.
   NOTE.—The large number of chemical analyses in this work have not been listed in the index.

2. On the Glacial pothole in the National Museum.

   Sci. Am. Suppl., vol. 58, p. 23844, 1 fig., 1904.
   See no. 891 of U. S. Geol. Surv., Bull. no. 240.

Michel-Lévy (Auguste).

1. L'éruption de la montagne Pelée et les volcans des Petites Antilles.

Revue gén. des Sciences, t. 13, pp. 554–557, 3 figs., 1902.

Discusses the broad problems of volcanic activity in the West Indies and other parts of the world.

Mickle (G. R.).

1. Volcanic origin of natural gas and petroleum.

Can. Mg. Inst., Jour., vol. 6, pp. 123–126, 1904.

Miller (G. W.).

1. Geology of the Butte mining district [Montana].

Ores & Metals, vol. 13, no. 10, pp. 15–16; no. 11, pp. 19–20, 3 figs., 1904.

Describes the mining of silver and copper ores, the general geology and the occurrence, character, and origin of the veins and fissures.

Miller (Willet G.).

1. Cobalt-nickel arsenides and silver.

Ont. Bur. Mines, Rept., 1904, pt. 1, pp. 96–103, 5 pls., 1904.

Describes the occurrence, character, and geological relations of ore deposits of nickel-cobalt arsenides and silver in the northern part of Ontario.

2. Undeveloped mineral resources of Ontario.

Canadian Mg. Inst., Jour., vol. 7 (advance separate), 20 pp., 1904.

Discusses the occurrence of minerals of economic value in the Province of Ontario.

Mills (S. Dillon).

1. Some recent rock movements in the Laurentian and Huronian areas [Ontario].

Can. Mg. Rev., vol. 23, pp. 174–177, 1904.

Mills (W. Magoon).

1. A physiographic and ecological study of the Lake Eagle (Winona Lake) region, Indiana.

Ind., Dept. Geol. & Nat. Res., 28th Ann. Rept., pp. 377–394, 3 pls., 4 figs., 1904.

Includes observations on the physiographic features of the region.

Moffit (Fred H.).

1. The Kotzebue placer-gold field of Seward Peninsula, Alaska.

U. S. Geol. Surv., Bull. no. 225, pp. 74–80, 1904.

Describes the general geology, and the occurrence and mining of placer gold.

Moissan (Henri).

1. Sur la présence de l'argon dans les gaz des fumerolles de la Guadeloupe.

Acad. des Sci. [Paris], Compt. rend., t. 138, pp. 936–938, 1904.

Describes the chemical analyses of gas from fumaroles of Guadeloupe.

2. Nouvelles recherches sur la météorite de Cañon Diablo.

Acad. des Sci. [Paris], Compt. rend., vol. 139, pp. 773–780, 2 figs., 1904.

Abstract: Am. Jour. Sci., 4th ser., vol. 19, p. 191, 1905.

Describes the characters and composition of this meteorite.

Monckton (G. F.).

1. Cinnabar-bearing rocks of British Columbia.

Inst. Mg. Engrs., Trans., vol. 27, pp. 463–469, 1 pl., 1904.

Describes the general geology and the occurrence of quicksilver ores.

Moore (Charles J.).

1. Geology applied to mining, or the practical use of geology in mining.

Colo. Sch. Mines, Bull., vol. 2, pp. 68–77, 6 figs., 1904.

Morgan (William Conger).

1. The origin of bitumen.

Cal. Jour. Tech., vol. 4, pp. 49–50, 1904.

Discusses various theories proposed to explain the origin of bitumen.

Morgan (William Conger) and **Tallmon** (Marion Clover).

1. A fossil egg from Arizona.

Cal. Univ., Dept. Geol., Bull., vol. 3, pp. 403–410, 2 pls., 1904.

2. A peculiar occurrence of bitumen and evidence as to its origin.

Am. Jour. Sci., 4th ser., vol 18, pp. 363–377, 2 pls., 1904.

Describes the occurrence, mode of fossilization, and character and origin of the mineralization of a fossil egg from Arizona.

Morscher (L. N.).

1. Corrading action of river water during high floods.

Kans. Univ. Geol. Surv., Min. Res. for 1902, pp. 82–97, 8 figs., 1903.

A study of river erosion based largely upon observations made upon the effects of the Kansas River flood of 1903.

Moses (Alfred J.).

1. The crystallization of molybdenite.

Am. Jour. Sci., 4th ser., vol. 17, pp. 359–364, 4 figs., 1904.

Describes crystallographic measurements of material from several sources.

2. Eglestonit, Terlinguait und Montroydit, neue Quecksilbermineralien von Terlingua in Texas.

Zeitsch. f. Krystal. u. Min., Bd. 39, pp. 3–13, 6 figs., 1904.

Describes the composition and crystallographic characters of quicksilver minerals from Texas.

Moses (Alfred J.) and **Luquer** (Lea McI.).

1. Notes on recent mineralogical literature.

Sch. of Mines Quart., vol. 25, pp. 412–427, 1904.

Musgrave (Robert).

1. Copper deposits of Mt. Sicker, Vancouver [British Columbia].

Eng. & Mg. Jour., vol. 78, pp. 673–674, 1904.

Describes the occurrence, character, and geologic relations of copper-ore deposits.

N.

Nansen (Fridtjof).

1. The bathymetrical features of the north Polar seas, with a discussion of the continental shelves and previous oscillations of the shore line.

   The Norwegian North Polar Expedition, 1893–1896; Scientific Results, vol. 4, XIII, 231 pp., 29 pls., 1904.

   Includes in the discussion an account of the continental shelves of Greenland and the North American coast.

Neumayer (L.).

1. Die Koprolithen des Perms von Texas.

   Palaeontographica, vol. 51, pp. 121–128, 1 pl., 1904.

   Describes the occurrence and character of coproliths from the Permian of Texas.

New York State Museum.

1. Economic geology of New York.

   N. Y. State Mus., Handbook 17, 40 pp., 1904.

   Gives brief accounts of the occurrence and utilization of mineral products of the state of New York.

Nicol (William).

1. Spinel twins of pyrite.

   Am. Jour. Sci., 4th ser., vol. 17, p. 93, 1904.

Nordenskjöld (Otto).

1. Notes on some specimens of rocks collected by C. Kruuse on the east coast of Greenland, between lat. 65° 35′ and 67° 22′ N.

   Meddelelser om Grönland, vol. 28, pp. 1–16, 1 pl., 1904.

O.

Obalski (J.).

1. On a mineral containing radium in the Province of Quebec.

   Can. Mg. Rev., vol. 23, pp. 114–116, 1904; Eng. & Mg. Jour., vol. 77, p. 441, 1904; Can. Mg. Inst., Jour., vol. 7, pp. 245–256, 8 figs., 1905.

   Describes the occurrence and characters of a mineral, cleveite, containing radium.

Ogilvie (I. H.).

1. Geological notes on the vicinity of Banff, Alberta.

   Jour. Geol., vol. 12, pp. 408–414, 4 figs, 1904.

   Describes the general geology and the character and origin of physiographic features of this region.

2. The effect of superglacial débris on the advance and retreat of some Canadian glaciers.

   Jour. Geol., vol. 12, pp. 722–743, 11 figs., 1904.

O'Harra (Cleophas C.).

1. The geology and mineralogy of the Black Hills region.

Black Hills, South Dakota. Papers read before the Black Hills Mining Men's Assoc., pp. 119-127, 1904.

Describes the general topographic and geologic features and character of the rocks of the region, and gives notes upon the occurrence, character, and geologic relations of the ore deposits, chiefly gold ores.

Oliphant (F. H.).

1. [In discussion of paper by R. Pearson on "The discovery of natural gas in Sussex, Heathfield district."]

Inst. Mg. Engrs. [Engl.], Trans., vol. 26, pp. 505-506 [1904].

A short note in regard to the distribution of natural gas in the United States.

2. Petroleum.

U. S. Geol. Surv., Min. Res. of U. S. for 1903, pp. 635-718, 1904.

Includes a table showing the stratigraphic position of petroleum-producing horizons in the Appalachian and Lima-Indiana fields.

Ordóñez (Ezequiel).

1. El mineral de Angangueo, Michoacan [México].

México, Inst. Geol., Par., t. 1, pp. 59-74, 1 pl., 4 figs., 1904.

Discusses vein phenomena and the occurrence of silver veins in a matrix of pyrite and galena.

2. Las aguas subterraneas de Amozoc [México].

México, Inst. Geol., Par., t. 1, pp. 117-120, 1904.

Discusses the occurrence of underground water in the State of Puebla, Mexico.

3. Las cenizas del volcan de Santa Maria.

México, Inst. Geol., Par., t. 1, pp. 229-234, 1904.

Describes ashes from the volcano Santa Maria, Guatemala.

Ortmann (A. E.).

1. Ueber die Decapoden-Gattungen Linuparus und Podocrates.

Centralbl. f. Min., Geol., u. Pal., pp. 713-714, 1901.

Discusses the relationships of these genera of crustacea.

Orton (Edward, jr.) and **Peppel** (S. V.).

1. The lime resources of Ohio available for Portland cement manufacture.

Ohio Geol. Surv., 4th ser., Bull. no. 3, pp. 88-101, 1904.

Discusses the occurrence, character, and geologic relations of limestones in Ohio suitable for use in manufacture of cements. Gives a table with many analyses of limestone.

Osann (A.).

1. Beiträge zur Geologie und Petrographie der Apache (Davis) Mts., Westtexas.

Tschermak's Min. & Petrogr. Mitt., N. F., Bd. 15, pp. 394-456, 2 pls. and 1 fig., 1896.

Describes the general geology of the region, the occurrence of igneous and Carboniferous and Cretaceous sedimentary rocks, and the petrographic characters of the igneous rocks.

Osborn (Henry Fairfield).

1. Reclassification of the Reptilia.

Am. Nat., vol. 38, pp. 93-115, 13 figs., 1904.

Reviews the history and principles of classification of the Reptilia, proposes a new classification, and gives definitions of the higher groups.

2. Paleontological evidence for the original tritubercular theory.

Am. Jour. Sci., 4th ser., vol. 17, pp. 321-323, 1 pl., 1904.

3. Recent zoopaleontology. Field expeditions during the past season.

Science, new ser., vol. 19, pp. 35-36, 1904.

4. Recent advances in our knowledge of the evolution of the horse.

Am. Phil. Soc., Proc., vol. 43, pp. 156-157, 1904. Abstract: Science, new ser., vol. 19, p. 717, 1904.

5. An armadillo from the middle Eocene (Bridger) of North America.

Am. Mus. Nat. Hist., Bull., vol. 20, pp. 163-165, 1904.

6. New Oligocene horses.

Am. Mus. Nat. Hist., Bull., vol. 20, pp. 167-179, 2 pls. and 8 figs., 1904.

7. Manus, sacrum, and caudals of Sauropoda.

Am. Mus. Nat. Hist., Bull., vol. 20, pp. 181-190, 6 figs., 1904.

8. Teleorhinus browni—a teleosaur in the Fort Benton.

Am. Mus. Nat. Hist., Bull,, vol. 20, pp. 239-240, 1904.

9. New Miocene rhinoceroses with revision of known species.

Am. Mus. Nat. Hist., Bull., vol. 20, pp. 307-326, 21 figs., 1904.

10. The great Cretaceous fish Portheus molossus Cope.

Am. Mus. Nat. Hist., Bull., vol. 20, pp. 377-381, 1 pl. and 4 figs., 1904.

11. Revised list of casts, models, photographs, and restorations of fossil vertebrates of the Department of vertebrate paleontology of the American Museum of Natural History.

Am. Mus. Nat. Hist., Bull., vol. 20, Supplement, 52 pp., 8 figs., 1904.

12. On the position of the bones of the forearm in the Opisthocœlia or Sauropoda.

Abstract: Science, new ser., vol. 19, pp. 255-256, 1904.

13. On the use of the sandblast in cleaning fossils.

Abstract: Science, new ser., vol. 19, p. 256, 1904.

14. A reclassification of the Reptilia.

Abstract: Science, new ser., vol. 19, pp. 256-257, 1904.

15. On the primary components of vertebræ and their relations to ribs.

Abstract: Science, new ser., vol. 19, p. 257, 1904.

16. The classification of the Reptilia.

Abstract: Science, new ser., vol. 19, pp. 307-308, 1904.

Osmont (Vance C.).

1. A geological section of the Coast Ranges north of the Bay of San Francisco.

   Cal. Univ., Dept. Geol., Bull., vol. 4, pp. 37–87, 2 pls., 1 fig., 1904.

   Describes the occurrence, character, and relations of stratified rocks of Jurassic, Cretaceous, Tertiary, and Quaternary age, and of igneous rocks observed in cross sections of the Coast Ranges of California, and the petrographical characters of the igneous rocks, and discusses the correlation of the Eocene strata, the geological structure along the sections and the geologic history of the region.

2. Arcas of the California Neocene.

   Cal. Univ., Dept. Geol., Bull., vol. 4, pp. 89–100, 4 pls., 1904.

   Gives systematic descriptions and discusses the occurrence of associated fossils, giving faunal lists.

Otsuka (S.).

1. A short sketch on the petroleum industry of Europe and America. [In Japanese.]

   Japan Geol. Surv., Bull., vol. 16, no. 1, pp. 1–82, 5 pls. (maps), 1903.

   Includes observations on the petroleum industry in the Appalachian region, Texas, and California.

Owen (Luella Agnes).

1. The loess at St. Joseph [Missouri].

   Am. Geol., vol. 33, pp. 223–228, 2 pls., 1904.

   Describes the occurrence and character of loess deposits at this point and discusses the origin of the loess.

2. Cave regions of the Ozarks and Black Hills.

   Cincinnati, The Editor Publishing Co., 228 pp., ill., 1898.

P.

Palache (Charles).

1. The Alaska-Treadwell mine. Notes on the geology of the mine and vicinity.

   Harriman Alaska Expedition, vol. 4, pp. 59–66, 2 figs., 1904.

   Describes the general geology, the occurrence and petrographic characters of the rocks, the occurrence of the gold ore deposits, and the mining operations.

2. Geology about Chichagof Cove, Stepovak Bay, with notes on Popof and Unga Islands.

   Harriman Alaska Expedition, vol. 4, pp. 69–88, 2 pls., 3 figs., 1904.

   Describes the general geology, the character and occurrence of sedimentary and igneous rocks, and the petrographic characters of the latter.

3. Notes on the minerals collected [by the Harriman Alaska expedition].

   Harriman Alaska Expedition, vol. 4, pp. 91–96, 1904.

   Describes the occurrence and characters of some minerals, and gives a list of minerals obtained and their localities.

Palache (Charles) and **Wood** (H. O.).

1. A crystallographic study of millerite.

   Am. Jour. Sci., 4th ser., vol. 18, pp. 343–359, 5 figs., 1904.

Palmer (T. S.).

1. North American Fauna, no. 23. Index generum mammalium: a list of the genera and families of mammals.

   U. S. Dept. Agric., Div. Biol. Surv., 984 pp., 1904.

   Includes also the fossil forms.

Park (Emma J.).

1. Winoka gravels, supposed Tertiary deposits. Origin of deposits.

   Drury College, Bradley Geol. Field Station, Bull., vol. 1, pp. 14–19, 1904.

   Describes gravel deposits of southwestern Missouri and discusses their age.

Parker (Charles A.).

1. Evidences of rheumatoid arthritis in the Lansing man.

   Am. Geol., vol. 33, pp. 39–42, 1 fig., 1904.

   Describes anatomical features of the fossil human bones discovered near Lansing, Kansas.

Parks (William Arthur).

1. Devonian fauna of Kwataboahegan River [Ontario].

   Ont. Bur. Mines, Rept., 1904, pt. 1, pp. 180–191, 8 pls., 1904.

   Describes the occurrence of Devonian fossils in the Moose River basin of Ontario, and gives systematic descriptions of new species.

2. A remarkable parasite from the Devonian rocks of the Hudson Bay slope.

   Am. Jour. Sci., 4th ser., vol. 18, pp. 135–140, 6 figs., 1904.

3. The study of stratigraphy.

   Can. Mg. Inst., Jour., vol. 7. Advance separate, 9 pp., 1904.

   Discusses the necessity of stratigraphy and paleontology in the geologic investigations of economic resources.

Parsons (A. L.).

1. The gypsum deposits of New York state.

   Abstract: Science, new ser., vol. 19, pp. 855–856, 1904.

Patton (Horace B.).

1. Fault-planes in the Dakota fire-clay beds at Golden, Colorado.

   Abstract: Geol. Soc. Am., Bull., vol. 15, p. 583, 1904.

Pearson (Herbert W.).

1. The place of the great raised beaches in geology.

   Ass. Eng. Soc., Jour., vol. 32, pp. 78–90, figs. 1–2, 1904.

   Discusses the occurrence and elevation of raised beaches, the explanation of subsidences and elevations, and the formation and location of coal mines.

Peck (Frederick B.).

1. Basal conglomerate in Lehigh and Northampton counties, Pennsylvania.

   Geol. Soc. Am., Bull., vol. 14, pp. 518–521, 1904.

   Describes the character and occurrence of this formation in the area under consideration.

Peck (Frederick B.)—Continued.

2. The Atlantosaur and Titanotherium beds of Wyoming.

Wyoming Hist. & Geol. Soc., Proc. & Coll., vol. 8, pp. 25–41, 5 pls., 1904.

Describes a geologic excursion in this region. Includes observations on the geology and paleontology of Jurassic and Cretaceous strata.

3. The cement belt in Lehigh and Northampton counties of Pennsylvania. A description of the geological formations.

Mines & Minerals, vol. 25, pp. 53–57, 6 figs., 1904.

Describes the physiographic features and the general stratigraphy of the region and the character and occurrence of the cement rock.

Peet (Charles Emerson).

1. Glacial and post-Glacial history of the Hudson and Champlain valleys.

Jour. Geol., vol. 12, pp. 415–469, 617–660, 27 figs., 1904.

Penhallow (D. P.).

1. Notes on Tertiary plants from Canada and the United States.

Can. Roy. Soc., Trans., 2d ser., vol. 10, sect. 4, pp. 57–76, 1904.

Describes two new species and gives notes upon the occurrence of a number of others in Tertiary and Pleistocene deposits.

Peppel (S. V.).

1. Gypsum deposits in Ohio.

U. S. Geol. Surv., Bull. no. 223, pp. 38–44, 3 pls., 1904.

Describes character and distribution, economic development and geologic relations of gypsum deposits occurring in Silurian strata of Ohio.

Peppel (S. V.), **Orton** (Edward, jr.) and.

1. The lime resources of Ohio available for Portland cement manufacture.

See Orton (Edward, jr.) and Peppel (S. V.), 1.

Perkins (George H.).

1. Notes on the wells, springs, and general water resources of Vermont.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 102, pp. 73–93, 1904.

2. List of works on the geology of Vermont.

Vt. Geol. Surv., Rept. State Geol., IV, pp. 16–21, 1904.

3. Mineral resources of Vermont.

Vt. Geol. Surv., Rept. State Geol., IV, pp. 22–66, 33 pls., 1904.

Reviews the economic resources and the mining and quarrying industries of Vermont.

4. Geology of Grand Isle County [Vermont].

Vt. Geol. Surv., Rept. State Geol., IV, pp. 103–143, 33 pls., 1 fig., 1904.

Describes the topographic and physiographic features and general geology, and the occurrence, character, and relations of Ordovician strata and Glacial deposits.

5. On the lignite or brown coal of Brandon and its fossils.

Vt. Geol. Surv., Rept. State Geol., IV, pp. 153–162, 1 fig., 1904.

Gives a historical sketch of the investigations upon the lignite fossils.

Perkins (George H.)—Continued.

6. Description of species [of fossil fruits] found in the Tertiary lignite of Brandon, Vermont.

Vt. Geol. Surv., Rept. State Geol., IV, pp. 174–212, 7 pls., 1904.

7. Hydrology of Vermont. A summary of investigations upon the drinking waters of Vermont.

Vt. Geol. Surv., Rept. State Geol., IV, pp. 213–227, 1904.

Perry (Joseph H.).

1. Geology of the Monadnock Mountain, New Hampshire.

Jour. Geol., vol. 12, pp. 1–14, figs. 1–5, 1904.

Describes character, occurrence, and relations of the granites, schists, and other rocks of the Monadnock Mountain, and discusses their age and the reasons for the survival of the mountain.

Peter (Alfred M.).

1. Report of the Division of Chemistry [of the Kentucky Agricultural Experiment Station].

Ky. Agric. Exp. Sta., 13th Ann. Rept., for the year 1900, pp. xi–xxxiv [1904?].

Includes chemical analyses of crude petroleum, phosphatic limestone, and mineral waters.

Peters (W. J.).

1. Itinerary and topographic methods [of a reconnaissance in northern Alaska].

U. S. Geol. Surv., Professional Paper no. 20, pp. 18–25, 1904.

Peterson (O. A.).

1. Osteology of Oxydactylus, a new genus of camels from the Loup Fork of Nebraska, with descriptions of two new species.

Carnegie Mus., Ann., vol. 2, pp. 434–476, pls. iv–xv, figs. 1–3, 1904.

2. Recent observations upon Dæmonelix.

Science, new ser., vol. 20, pp. 344–345, 1904.

Phalen (W. C.).

1. Notes on the rocks of Nugsuaks Peninsula and its environs, Greenland.

Smith. Misc. Coll., vol. 45, pp. 183–212, pls. 53–55, 1904.

Describes characters and occurrence of rocks from northern Greenland.

2. A new occurrence of unakite—a preliminary paper.

Smith. Misc. Coll., vol. 45 (Quar. Issue, vol. 1, pts. 3 and 4), pp. 306–316, 3 pls., 1 fig., 1904.

Describes the occurrence and characters of unakite and associated rocks at Milams Gap, Virginia.

Phillips (Alexander H.).

1. Radium in an American ore.

Am. Phil. Soc., Proc., vol. 43, pp. 157-160, 1904.

Describes the occurrence and composition of carnotite from Utah and Colorado, and the extraction of radium therefrom.

Phillips (William B.)

1. Report of progress of the University of Texas Mineral Survey for the year ending December 31, 1903.

   Tex. Univ. Min. Surv., Bull. no. 7, 14 pp., 1904.
   Gives an outline of the geologic work of the survey.

2. A new quicksilver field in Brewster County, Texas.

   Eng. & Mg. Jour., vol. 77, pp. 160–161, 1904.
   Describes the occurrence of the ore and the general geology of the district in which it occurs.

3. Lead ore in Burnett County, Texas.

   Eng. & Mg. Jour., vol. 77, p. 364, 1904.
   Describes the occurrence of lead ore and gives observations upon the geology of the region.

4. Extension of the quicksilver district in Brewster County, Texas.

   Eng. & Mg. Jour., vol. 78, p. 212, 1904.

5. Condition of the quicksilver industry in Brewster County, Texas.

   Eng. & Mg. Jour., vol. 78, pp. 553–554, 1904.
   Contains notes on the occurrence of the quicksilver ores of this region.

6. The coal, lignite, and asphalt rocks of Texas.

   Western Soc. Engrs., Jour., vol. 9, pp. 571–592, 1 pl., 1904.
   Describes the occurrence of coal, lignite, and asphalt in Texas.

Poole (Henry S.).

1. Report on the coal prospects of New Brunswick.

   Can. Geol. Surv., Ann. Rept., new ser., vol. 13, 26 pp., 1903.
   Decribes the geologic structure of the Carboniferous field in New Brunswick, its correlation with that of Nova Scotia, and the probable location of coal beds and their character. In an appendix gives detailed records of borings.

2. A trip to West Virginia.

   Nova Scotia Mg. Soc., Jour., vol. 8, pp. 127–131, 1904.
   Includes observations upon the coals and coal fields of West Virginia.

Powers (H. C.).

1. The smoking bluffs of the Missouri River region.

   Sioux City Acad. Sci. and Letters, vol. 1, pp. 57–60, 1904.
   Describes the phenomenon and explains it as due to disintegration under atmospheric action of the iron pyrites in Cretaceous deposits.

Pratt (Joseph Hyde).

1. The mining industry in North Carolina during 1900.

   N. C. Geol. Surv., Economic Papers, no. 4, 36 pp., 1901.
   Contains notes on the occurrence of economic products and minerals.

2. The mining industry in North Carolina during 1902.

   N. C. Geol. Surv., Economic Paper, no. 7, 27 pp., 1904.
   Contains notes on the occurrence of economic products and minerals.

Pratt (Joseph Hyde) and **Sterrett** (Douglass B.).

1. The tin deposits of the Carolinas.

N. C. Geol. Surv., Bull. no. 19, 64 pp., 8 figs., 1904.

Describes the occurrence, character, geologic relations, origin, and economic development of the tin-ore deposits of North Carolina and South Carolina.

Pratt (Joseph Hyde), **Struthers** (Joseph) and.

1. Tin.

See Struthers (Joseph) and Pratt (Joseph Hyde), 1.

Prichard (William A.).

1. Observations on Mother Lode gold deposits, California.

Am. Inst. Mg. Engrs., Trans., vol. 34, pp. 454–466, 1904.

See no. 980 of the Bibliography for 1903, U. S. Geol. Surv., Bull. no. 240.

Prindle (L. M.).

1. Gold placers of the Fairbanks district, Alaska.

U. S. Geol. Surv., Bull. no. 225, pp. 64–73, 1 fig., 1904.

Describes the general geology and the occurrence of placer gold and the mining operations.

Prosser (Charles S.).

1. Description and correlation of the Romney formation of Maryland.

Jour. Geol., vol. 12, pp. 361–372, 1904.

Describes character and occurrence of the Romney formation and its members in Maryland, and discusses their correlation with Devonian formations of New York on stratigraphic and faunal evidence; discusses also the correlation of American Devonian formations with those of Europe.

Prosser (Charles S.) and **Beede** (J. W.).

1. Cottonwood Falls folio, Kansas.

U. S. Geol. Surv., Geol. Atlas of U. S., folio no. 109, 1904.

Describes the physiography, the occurrence, character, geologic relations, and stratigraphy of Carboniferous formations, the geologic structure and economic resources.

Prosser (Charles S.) and **Cumings** (Edgar R.).

1. The Waverly formations of central Ohio.

Am. Geol., vol. 34, pp. 335–361, 3 pls., 1904.

Describes the occurrence, character, and relations of the various members of the Waverly series in central Ohio, giving numerous detailed sections of the strata.

Prutzman (Paul).

1. Production and use of petroleum in California.

Cal. State Mg. Bur., Bull. no. 32, 230 pp., 64 figs., 1904.

Describes the general geology, and the occurrence, character, production, and utilization of petroleum from southern California.

Pultz (John Leggett).

1. The Big Stone Gap coal field of Virginia and Kentucky.

Eng. Mag., vol. 28, pp. 71–85, 11 figs., 1904.

Includes a description of the geologic conditions existing in the Big Stone Gap coal field of Virginia and Kentucky, and the occurrence and character of workable coal seams, with a generalized section of the strata.

Purdue (A. H.).

1. Notes on the wells, springs, and general water resources of Arkansas.

   U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 102, pp. 374–388, 1904.

R.

Ransome (Frederick Leslie).

1. The geology and ore deposits of the Bisbee quadrangle, Arizona.

   U. S. Geol. Surv., Professional Paper no. 21, 168 pp., 29 pls., 5 figs., 1904.

   Describes physiographic features and the general geology, the character, occurrence, and geological relations of pre-Cambrian, Cambrian, Devonian, Carboniferous, and Cretaceous strata and igneous rocks, the geologic structure and history, and the character, occurrence, economic development, and origin of the copper ore deposits.

2. The geology and copper deposits of Bisbee, Arizona.

   Am. Inst. Mg. Engrs., Trans., vol. 34, pp. 618–642, 6 figs., 1904.

   See no. 994 of the Bibliography for 1903, U. S. Geol. Surv., Bull. no. 240.

3. Globe folio, Arizona.

   U. S. Geol. Surv., Geol. Atlas of U. S., folio no. 111, 1904.

   Describes the physiographic divisions of Arizona, the topography, climate and vegetation, and general geology of the area, the occurrence, character, and geological relations of pre-Cambrian, Cambrian, Devonian, Carboniferous, Tertiary, and Quaternary deposits and igneous rocks, the geologic structure and history, the occurrence, character, origin, geologic relations, and mining of the ores, chiefly gold, silver, and copper.

4. Bisbee folio, Arizona.

   U. S. Geol. Surv., Geol. Atlas of U. S., folio no. 112, 1904.

   Describes the topography and drainage, the general geology, the character, occurrence, and relations of pre-Cambrian metamorphic rocks, Cambrian, Devonian, Carboniferous, and Cretaceous strata, Quaternary deposits, and igneous rocks, the geologic structure and its expression in topography, the geologic history, and the economic resources, principally copper ores.

5. The geographic distribution of metalliferous ores within the United States.

   Mg. Mag., vol. 10, pp. 7–14, 1 pl., 1904.

   Describes the physiographic divisions of the United States, and the occurrence and production of ores in them.

Ransome (Frederick Leslie), **Lindgren** (Waldemar) and.

1. Report of progress in the geological resurvey of the Cripple Creek district, Colorado.

   See Lindgren (Waldemar) and Ransome (F. L.), 1.

Raymond (Percy E.).

1. The developmental changes in some common Devonian brachiopods.

   Am. Jour. Sci., 4th ser., vol. 17, pp. 279–300, 7 pls., 20 figs., 1904.

Raymond (Percy E.)—Continued.

2. The Tropidoleptus fauna at Canandaigua Lake, New York, with the ontogeny of twenty species.

Carnegie Mus., Annals, vol. 3, no. 1, pp. 79–177, 8 pls., 50 figs., 1904.

Describes the developmental changes of some Devonian brachiopods from the Tropidoleptus fauna at Canandaigua Lake, New York, and gives a comparative faunal study of this faunule.

Raymond (William James).

1. A new species of Pleurotoma from the Pliocene of California.

Nautilus, vol. 18, pp. 14–16, 1904.

Read (Thomas T.).

1. The alkali deposits of Wyoming.

Am. Geol., vol. 34, pp. 164–169, 1904.

Describes their occurrence and discusses their origin.

2. Copper mining in the Encampment, Wyoming, and Pearl, Colorado, districts.

Mg. Rep., vol. 50, pp. 462–463, 1904.

Describes the general geology and the occurrence and character of the copper ores.

Reid (Harry Fielding).

1. Les variations périodiques des glaciers. Etats-Unis. VIIIme rapport, 1902.

Arch. des Sci. phys. et nat., 4. pér., t. 16, pp. 92–94, 1903.

2. Les variations périodiques des glaciers. Etats-Unis. IXme rapport, 1903.

Arch. des Sci. phys. et nat., 4. pér., t. 18, pp. 191–193, 1904.

3. The variations of glaciers. IX.

Jour. Geol., vol. 12, pp. 252–263, 1904.

Gives a summary of the eighth annual report of the International Committee on glaciers. Includes observations on the glaciers of the United States.

4. The relation of the blue veins of glaciers to the stratification, with a note on the variations of glaciers.

Congr. géol. intern., Compte rendu IX. Sess., pp. 703–706, 1904.

Reid (John A.).

1. Preliminary report on the building stones of Nevada, including a brief chapter on road metal.

Nev. Univ., Dept. Geol. & Mg., Bull., vol. 1, no. 1, 58 pp., 1904.

Rice (William North).

1. The physical geography and geology of Connecticut.

Conn. Bd. Agric., 37th Ann. Rept., pp. 94–113, 2 pls., 1904.

Describes the physiographic features of Connecticut and their relation to the geologic structure of the state.

2. The proper scope of geological teaching in the high school and academy.

Nat. Educ. Assoc., Proc. for 1903, pp. 853 856, 1904.

Richards (Ralph W.).

1. A new habit for chalcopyrite.

Tufts Coll. Studies, no. 8, pp. 383–385, 1 fig., 1904; Am. Jour. Sci., 4th ser., vol. 17, pp. 425–426, 1 fig., 1904.

Describes occurrence and crystallographic features.

Richardson (George Burr).

1. Indiana Folio, Pennsylvania.

U. S. Geol. Surv., Geol. Atlas of U. S., folio no. 102, 1904.

Describes physiographic features, the character, occurrence, and relations of Carboniferous strata, and general geologic structure, the character and occurrence of the coals, natural gas, and other economic resources.

2. Report of a reconnaissance in trans-Pecos Texas, north of the Texas and Pacific Railway.

Tex. Univ., Min. Surv., Bull. no. 9, 119 pp., 11 pls., 4 figs., 1904.

Describes the topography, the character, occurrence, and geologic relations of pre-Cambrian, Cambrian, Ordovician, Silurian, Carboniferous, Triassic, Jurassic, Cretaceous, and Quaternary deposits, the mineral recources, and underground water supply of the region.

3. The stratigraphic sequence in trans-Pecos Texas, north of the Texas and Pacific Railway.

Abstract: Science, new ser., vol. 19, pp. 794–795, 1904.

Rickard (Forbes).

1. Copper deposits in Sinaloa and southern Sonora [Mexico].

Eng. & Mg. Jour., vol. 78, pp. 97–98, 4 figs., 1904.

Describes the occurrence, geologic relations, and economic development of copper ore deposits in this part of Mexico.

2. Notes on tungsten deposits in Arizona.

Eng. & Mg. Jour., vol. 78, pp. 263–265, 2 figs., 1904.

Describes the general geology of the Little Dragoon mountains in Arizona, and the geologic relations, occurrence, character, and mining of the deposits of tungsten ores.

Rickard (T. A.).

1. Copper mines of Lake Superior.

Eng. & Mg. Jour., vol. 78, pp. 585–587, 625–627, 665–667, 705–706, 745–747, 785–787, 825–827, 865–867, 905–907, 945–950, 985–987, illus., 1904.

Includes a description of the general geology of the region, the character and occurrence of the copper-ore deposits, and the mining operations.

Ries (Heinrich).

1. Notes on mineral developments in the region around Ithaca [New York].

N. Y. State Mus., 56th Ann. Rept., pp. r107–r108, 1904.

Gives notes on the occurrence of economic materials and a geological section of a deep well.

2. Notes on recent mineral developments at Mineville [New York].

N. Y. State Mus., 56th Ann. Rept., pp. r125–r126, 1904.

Briet notes on the occurrence and production of iron ore at this locality.

Ries (Heinrich)—Continued.

3. Clay and its properties.

N. J. Geol. Surv., vol. 6, pp. 1-115, 15 pls., 34 figs., 1904.

Discusses mode of occurrence, methods of working, chemical and physical properties.

4. The manufacture of clay products, with especial reference to the New Jersey industry.

N. J. Geol. Surv., vol. 6, pp. 211-533, 32 pls., 5 figs., 1904.

Includes notes on the occurrence and properties of clays.

Riggs (Elmer S.).

1. Dinosaur footprints from Arizona.

Am. Jour. Sci., 4th ser., vol. 17, pp. 423-424, 1 fig., 1904.

Describes occurrence and character of footprints.

2. Structure and relationships of Opisthocœlian dinosaurs. Part II. The Brachiosauridæ.

Field Col. Mus., Geol. Ser., vol. 2, pp. 229-247, 5 pls., 1 fig., 1904.

Rivers (J. J.).

1. Descriptions of some undescribed fossil shells of Pleistocene and Pliocene formations of the Santa Monica Range [California].

So. Cal. Acad. Sci., Bull., vol. 3, pp. 69-72, 1904.

Robertson (William Fleet).

1. Summary report on the valley of the Flathead River [British Columbia].

Brit. Col., Ann. Rept. Minister Mines for 1903, pp. 79-92, 1904.

Includes observations upon the physiography, geology, and economic resources of the region examined.

2. Report on the Trout Lake mining division [British Columbia].

Brit. Col., Ann. Rept. Minister Mines for 1903, pp. 109-124, 1904.

Includes observations upon the geology and economic resources of the region.

3. Report on the Lardeau mining district [British Columbia].

Brit. Col., Ann. Rept. Minister Mines for 1903, pp. 127-130, 1904.

Includes observations upon the geology of the region.

4. Petrography of rock samples from British Columbia.

Brit. Col., Ann. Rept. Minister Mines for 1903, pp. 254-263, 1904.

Gives reports upon examinations of rock specimens from British Columbia by A. E. Barlow, J. A. Dresser, and L. P. Silver.

Robinson (Neil).

1. The Kanawha and New River coal fields of West Virginia, U. S. A.

Charleston, W. Va., 23 pp., 3 pls., 1904. [Private publication.]

Includes notes upon the occurrence, geologic relations, composition, fuel values, and production of coal in the Kanawha and New River coal fields of West Virginia.

Rogers (Austin F.).

1. A method for the exact expression of crystal habit.

Sch. of Mines Quart., vol. 25, pp. 199-203, 22 figs., 1904.

Rogers (Austin F.), **Beede** (J. W.) and.

1. Coal Measure faunal studies, III. Lower Coal Measures.

See Beede (J. W.) and Rogers (Austin F.), 1.

Rolfe (Charles W.).

1. The geology of Illinois as related to its water supply.

Ill. Univ., Chemical Survey of the waters of Illinois, pp. 41–56, 2 pls. (geol. maps), 1903.

Gives an outline of the general geology and the geological history of Illinois.

Rose (Robert Selden).

1. The geology of some of the lands in the Upper Peninsula [Michigan].

Mg. World, vol. 21, pp. 205–207, 1904; Eng. & Mg. Jour., vol. 78, pp. 343–344, 1904.

Describes the general geology and the occurrence and character of the iron-ore deposits.

Rowe (J. P.).

1. Nodular barite and selenite crystals of Montana.

Am. Geol., vol. 33, pp. 198–199, 1904.

Describes occurrence and composition of selenite crystals and nodular barite in Montana.

2. Pseudomorphs and crystal cavities.

Am. Jour. Sci., 4th ser., vol. 18, p. 80, 1 fig., 1904.

Describes material from Shoshone, Idaho.

Rowley (R. R.).

1. The echinodermata of the Missouri Silurian and a new brachiopod.

Am. Geol., vol. 34, pp. 269–282, 1 pl., 1904.

Ruedemann (Rudolf).

1. Graptolites of New York. Part 1. Graptolites of the lower beds.

N. Y. State Mus., Mem. 7, pp. 455–803, 17 pls. and 105 figs., 1904.

Gives a review of investigations upon the graptolites, discusses their structure, morphology, classification, phyllogeny, range and distribution, and gives systematic descriptions of the graptolites from the upper Cambrian and lower Ordovician of New York.

Ruhl (Otto).

1. The King-Ritter fault.

Drury Coll., Bradley Field Geol. Station, Bull., vol. 1, pp. 33–36, 1904.

Describes occurrence and character of faulting along the northern slope of the Ozark uplift in southwestern Missouri.

2. Observations at Pegmatite Hill [Camden County, Missouri].

Drury Coll., Bradley Field Geol. Station, Bull., vol. 1, pp. 36–40, 1904.

Describes the geologic structure at this locality.

Russell (Israel C.).

1. Criteria relating to massive-solid volcanic eruptions.

Am. Jour. Sci., 4th ser., vol. 17, pp. 253–268, 3 figs., 1904.

Describes massive-solid volcanic eruptions and discusses the character of the evidence necessary to determine that volcanic masses have been extruded in a solid state.

Russell (Israel C.)—Continued.

2. Physiographic problems of to-day.

Jour. Geol., vol. 12, pp. 524–550, 1904.

Discusses the scope, nomenclature, and field of investigation of physiography, the use of ideal physiographic types, the primary and secondary features of the earth's surface, and the relations of physiography to life and man.

3. North America (Appleton's World Series: The regions of the world).

New York, D. Appleton and Company, 435 pp., 8 pls., 39 figs., 1904.

Includes chapters on the margin of the continent, the topography of the land, climate, plant life, animal life, geology, the aborigines, and political geography. In the chapter on geology describes the growth of the continent, the distribution and character of the rocks of which it is composed, and the occurrence of economic products.

4. Douglass Houghton.

Mich. Acad. Sci., 4th Rept., pp. 160–162, por., 1904.

Gives a brief account of his life.

5. Bela Hubbard.

Mich. Acad. Sci., 4th Rept., pp. 163–165, por., 1904.

Gives a brief account of his life.

6. See Fairchild (H. L.), 3.

S.

Salisbury (Rollin D.).

1. Three new physiographic terms.

Jour. Geol., vol. 12, pp. 707–715, 5 figs., 1904.

Defines, discusses, and illustrates the application of the physiographic terms topographic unconformity, topographic and structural adjustment, and superimposed youth.

Salisbury (Rollin D.), **Chamberlin** (Thomas C.), and.

1. Geology. In two volumes. Vol. 1. Geologic processes and their results.

See Chamberlin (Thomas C.) and Salisbury (Rollin D.), 1.

Sapper (Karl).

1. Die Alta Verapaz (Guatemala).

Mitth. d. Geog. Ges. in Hamburg, Band 17, pp. 78–214, 5 pls. (maps), 1901.

Describes the general geology, the character and occurrence of pre-Paleozoic, Paleozoic, Mesozoic, Tertiary, and Cenozoic formations, the geologic history, and the petrology of this region.

2. Die südlichsten Vulkane Mittel-Amerikas.

Zeitschr. d. Deutsch. geol. Gesellsch., Bd. 53, pp. 24–51, 5 figs., 1901.

Describes volcanoes in the southern part of Central America.

3. Das Erdbeben in Guatemala vom 18. April 1902.

Petermanns Mitteilungen, Band 48, pp. 193–195, 1 pl. (map), 1902.

Describes the earthquake of April 18, 1902, in Guatemala.

4. Die vulcanischen Ereignisse in Mittelamerika im Jahre 1902.

Neues Jahrb. f. Min., etc., Bd. 1, pp. 39–90, 7 pls., 8 figs., 1904.

Describes volcanic eruptions of 1902 in Central America.

Sapper (Karl)—Continued.

5. Neuere vulkanische Ereignisse in Mittelamerika.

Centralbl. f. Min., pp. 449–450, 1904.

Notes the activity of some volcanoes in several States of Central America.

6. Die vulcanischen Kleinen Antillen und die Ausbrüche der Jahre 1902 und 1903.

Neues Jahrb. f. Min., etc., Bd. 2, pp. 1–70, 13 pls., 9 figs., 1904.

Discusses volcanic and related phenomena of the Lesser Antilles that took place in 1902 and 1903, the character and occurrence of the volcanic rocks ejected, and the forms of the Antillean volcanoes.

7. St. Vincent.

Globus, Bd. 84, pp. 297–303, 377–383, 1903. -

Describes the eruption and its effects of the Soufrière on St. Vincent.

Sardeson (Frederick W.).

1. See Fairchild (H. L.), 3.

Sarle (Clifton J.).

1. Economic geology of Monroe County and contiguous territory [New York].

N. Y. State Mus., 56th Ann. Rept., pp. r75–r106, 1 pl., 1904.

Describes the general geology of the county, and the occurrence and utilization of stone, clays, sand, gravel, gypsum, and peat.

Savage (T. E.).

1. A buried peat bed in Dodge township, Union County, Iowa.

Iowa Acad. Sci., Proc. for 1903, vol. 11, pp. 103–109, 1 pl., 1904.

Describes occurrence and geologic relations of a peat bed in Glacial deposits, and discusses its origin.

Schaller (Waldemar T.).

1. Notes on some California minerals.

Am. Jour. Sci., 4th ser., vol. 17, pp. 191–194, 1904.

Describes the character, occurrence, and composition of halloysite, amblygonite, boothite, pisanite, and a quartz pseudomorph.

2. The tourmaline localities of southern California.

Science, new ser., vol. 19, pp. 266–268, 1904.

Describes the occurrence and character of tourmaline deposits.

Schaller (W. T.) and **Hillebrand** (W. F.).

1. Crystallographical and chemical notes on lawsonite.

Am. Jour Sci., 4th ser., vol. 17, pp. 195–197.

Schmeckebier (Laurence F.).

1. Catalogue and index of the publications of the Hayden, King, Powell, and Wheeler surveys, namely: Geological and Geographical Survey of the Territories, Geological Exploration of the Fortieth Parallel, Geographical and Geological Surveys of the Rocky Mountain region, Geographical and Geological Surveys west of the One Hundredth Meridian.

U. S. Geol. Surv., Bull. no. 222, 208 pp., 1904.

Schmitt (Joseph).

1. Monographie de l'Ile d'Anticosti (golfe Saint-Laurent).

Paris, A. Hermann, 1904. vi, 367 pp., 12 figs. and map. (Not seen.)

Schneider (Philip F.).

1. South Onondaga geology.

In "The Septuagenary of the South Onondaga Methodist Episcopal Society" by W. W. Newman (Syracuse, N. Y., C. W. Bardeen, 1904, 108 pp.), pp. 80-84, 1904.

Gives a sketch of the geological history of the region around South Onondaga, New York.

Schrader (Frank Charles).

1. Reconnaissance in northern Alaska across the Rocky Mountains, along Koyukuk, John, Anaktuvuk, and Colville rivers, and the Arctic coast to Cape Lisburne, in 1901.

U. S. Geol. Surv., Professional Paper no. 20, 139 pp., 16 pls., 4 figs., 1904.

Reviews previous exploration of the region, describes the geography, character and occurrence of Silurian, Devonian, Cretaceous, Tertiary, and Quaternary strata, and the mineral resources, principally gold and coal.

Schramm (Eck Frank).

1. A preliminary report on the building stone of Oklahoma.

Okla., Dept. Geol. & Nat. Hist., 3d Bien. Rept., pp. 37-49, 1904.

Schuchert (Charles).

1. Dall's Contributions to the Tertiary Fauna of Florida.

Am. Geol., vol. 33, pp. 143-154, 1904.

2. Charles Emerson Beecher.

Am. Jour. Sci., 4th ser., vol. 17, pp. 411-422, 1 pl. (por.), 1904.

Gives an account of his life and paleontologic work, and a list of his published papers.

3. The stratigraphy and paleontology of the Niagara of northern Indiana.

Am. Jour. Sci., 4th ser., vol. 18, pp. 465-469, 1904.

Reviews a paper with the above title in the Twenty-eighth Annual Report of the Geological Survey of Indiana by E. M. Kindle, and discusses the subject-matter of the paper.

4. On Siluric and Devonic Cystidea and Camarocrinus.

Smith. Misc. Coll., vol. 47 (Quar. Issue, vol. 2, pt. 2), pp. 201-272, 11 pls., 24 figs., 1904.

Describes the occurrence near Keyser, West Virginia, of a cystid fauna, and gives a section of the strata of the Manlius formation at this locality and systematic descriptions of Silurian and Devonian cystids.

Schwarz (T. E.).

1. Notes on an occurrence of mica in Boulder County [Colorado].

Colo. Sci. Soc., Proc., vol. 7, pp. 139-140, 1903.

Scott (W. B.).

1. John Bell Hatcher.

Science, new ser., vol. 20, pp. 139-142, 1904.

Gives an account of his life and work.

Sebbin (E. W.).

1. Geology of Mexico.

Lead & Zinc News, vol. 8, pp. 130–131, 1904.
Gives a brief account of the general geology of Mexico.

Seely (Henry M.).

1. Sketch of the life and work of Charles Baker Adams.

Vt. Geol. Surv., Rept. State Geol., IV, pp. 3–15, 1 pl. (por.), 1904.
Reprinted from The American Geologist, vol. 32, pp. 1–12, 1903.

2. The Stromatoceria of Isle La Motte, Vermont.

Vt. Geol. Surv., Rept. State Geol., IV, pp. 144–165, 5 pls., 1904.

Sellards (E. H.).

1. A study of the structure of Paleozoic cockroaches, with descriptions of new forms from the Coal Measures.

Am. Jour. Sci., 4th ser., vol. 18, pp. 113–134, 213–227, 1 pl., 37 figs., 1904.

Shaler (N. S.).

1. A comparison of the features of the earth and the moon.

Smith. Cont. Knowl., vol. 34, pp. 1–79, 25 pls., 1903.

Sharwood (W. J.), **Eakle** (A. S.), and.

1. Luminescent zinc-blende.

See Eakle (A. S.) and Sharwood (W. J.), 1.

Shattuck (George Burbank).

1. Papers read before the Geological Society of America.

Science, new ser., vol. 19, pp. 523–533, 1904.

2. The Miocene deposits of Maryland. Geological and paleontological relations, with a review of earlier investigations.

Md. Geol. Surv., Miocene, pp. xxiii–cxxxvii, 9 pls., 1904.
Gives a historical review of investigations upon the Maryland Miocene deposits and a bibliography of literature relating thereto, and describes in detail the character, occurrence, relations, etc., of the Miocene formations in Maryland, with sections of strata and a tabular list of fossils, showing geographic and geologic distribution and range.

Shepard (Edward M.).

1. Table of geological formations.

Drury Coll., Bradley Field Geol. Station, Bull., vol. 1, pp. 41–42, 1904.
Gives in tabular form the geologic formations of Missouri correlated with those of Arkansas.

2. Notes on the wells, springs, and general water resources of Missouri.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 102, pp. 389–440, 1904.

Sheridan (Jo E.).

1. Annual report of the mine inspector for the Territory of New Mexico.

U. S. Mine Inspector for the Territory of N. Mex., Ann. Rept. to the Secretary of the Interior for the year ended June 30, 1904. Washington, 1904. 79 pp.

Includes a description of the New Mexico coal fields, showing the occurrence, character, geologic relations, etc., of the coal seams.

Shimek (B.).

1. Fresh-water shells in the loess.

Abstract: Geol. Soc. Am., Bull., vol. 15, p. 576, 1904; Science, new ser., vol. 19, p. 533, 1904; Sci. Am. Suppl., vol. 57, p. 23447, 1904.

2. Helicina occulta Say.

Davenport Acad. Sci., Proc., vol. 9, pp. 173–180, 1904.

Discusses the geographical and geological distribution of this mollusc, which occurs in a fossil state in the loess.

3. Papers on the loess.

Iowa State Univ., Lab. Nat. Hist., Bull., vol. 5, pp. 298–381, 1904.

Includes the five following papers.

4. The loess of Natchez, Miss.

Iowa State Univ., Lab. Nat. Hist., Bull., vol. 5, pp. 299–326, 7 pls., 1904.

This paper appeared in the American Geologist, vol. 30, 1902. See no. 961 of U. S. Geol. Surv., Bull. no. 221, 1903.

5. The loess and the Lansing man.

Iowa State Univ., Lab. Nat. Hist., Bull., vol. 5, pp. 327–346, 1904.

This paper appeared in the American Geologist, vol. 32, 1903. See no. 1105 of U. S. Geol. Surv., Bull. no. 240, 1904.

6. The Lansing deposit not loess.

Iowa State Univ., Lab. Nat. Hist., Bull., vol. 5, pp. 346–352, 3 pls., 1904.

Discusses the characters which distinguish loess deposits, and their bearing upon the kind and age of the deposits containing the Lansing human remains.

7. Loess and the Iowan drift.

Iowa State Univ., Lab. Nat. Hist., Bull., vol. 5, pp. 352–368, 2 pls., 1904.

Discusses the position of loess deposits with reference to drift deposits, and the bearing of these facts upon the question of the formation of the loess, and points out the stratigraphic position of various loess deposits.

8. Evidences (?) of water-deposition of loess.

Iowa State Univ., Lab. Nat. Hist., Bull., vol. 5, pp. 369–381, 2 pls., 1904.

Discusses the evidences advanced for the theory of the deposition of loess by water action.

Simmons (Jesse).

1. Tungsten ores in the Black Hills.

Mg. Rep., vol. 50, pp. 217–218, 1904.

Describes the occurrence and character of tungsten ores and discusses their origin.

Sinclair (William J.).

1. The exploration of the Potter Creek cave [California].

Cal. Univ. Publ., Am. Arch. & Eth., vol. 2, pp. 1-27, 14 pls., 1904.

Describes the general geology and physiography of the region, the stratigraphy of the cave deposits, the occurrence of the remains of Quaternary vertebrates, with a list of identified forms, and their relations to other faunas.

Sinclair (William J.) and **Furlong** (E. L.).

1. Euceratherium, a new ungulate from the Quaternary caves of California.

Cal. Univ., Dept. Geol., Bull., vol. 3, pp. 411-418, 2 pls., 1 fig., 1904.

Skeat (Ethel G.).

1. The Jurassic rocks of East Greenland.

Geol. Assoc., Proc., vol. 18, pp. 336-350, 1 pl., 1904.

Gives an historical review of geological exploration in East Greenland, describes the general geologic structure and the occurrence of Jurassic strata and their fossil contents, and discusses the distribution of land and sea during Jurassic time.

Smith (A. F.), **Ball** (Sydney H.) and.

1. The geology of Miller County.

See Ball (Sydney H.) and Smith (A. F.), 1.

Smith (A. F.), **Buckley** (E. R.), **Ball** (S. H.), and.

1. Glacial boulders along the Osage River in Missouri.

See Buckley (E. R.), Ball (S. H.), and Smith (A. F.), 1.

Smith (Alva J.).

1. A bulletin on Lyon County geology.

Emporia, Kansas. 11 pp., 4 pls., 1902. (Private publication.)

Describes the topography and general geology of Lyon County, Kansas. Parts of the paper were presented to the Kansas Academy of Science, and published in its Transactions, vols. 16 and 17.

Smith (Dwight T.).

1. The geology of the upper region of the main Walker River, Nevada.

Cal. Univ., Dept. Geol., Bull., vol. 4, pp. 1-32, 4 pls. and 2 figs., 1904.

Describes the physical features of the region, the occurrence, character, and geologic relations of the sedimentary Tertiary and igneous rocks, the unconformities between formations, the geological structure of the area, and the character and occurrence of gold and copper ore deposits.

Smith (E. Percy) and **Dominian** (Leon).

1. Notes on a trip to White Oaks, New Mexico.

Eng. & Mg. Jour., vol. 77, pp. 799-800, 1904.

Gives observations on the economic resources and geology of the region.

Smith (Eugene Allen).

1. The cement resources of Alabama.

U. S. Geol. Surv., Bull. no. 225, pp. 424-447, 1904.

Describes location, geologic horizon, character, and availability for cement manufacture of the limestones and clays of Alabama.

Smith (Eugene Allen)—Continued.

2. The cement resources of Alabama.

Ala. Geol. Surv., Bull no. 8, pp. 61–93, 16 pls. (incl. geol. map), 1904.

Describes the occurrence, character, and geological relations of limestones in Alabama available for cement manufacture.

3. Notes on the wells, springs, and general water resources of Alabama.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 102, pp. 276–331, 1904.

Smith (Eugene Allen) and **McCalley** (Henry).

1. Index to the mineral resources of Alabama.

Ala. Geol. Surv., 79 pp., map and 6 pls., 1904.

Describes the occurrence, geologic relations, and character of the economic resources of Alabama.

Smith (George Otis).

1. Mount Stuart folio—Washington.

U. S. Geol. Surv., Geol. Atlas of U. S., folio no. 106, 1904.

Describes physiographic features, the geologic history and structure, the occurrence, character, and relations of pre-Tertiary and Tertiary strata and igneous rocks, and the economic resources, chiefly gold and coal.

2. Quartz veins in Maine and Vermont.

U. S. Geol. Surv., Bull. no. 225, pp. 81–88, 1904.

Describes the occurrence and character of quartz veins carrying precious metals.

3. Stratigraphic problems in the northern Cascades.

Abstract: Science, new ser., vol. 19, p. 921, 1904.

Smith (George Otis) and **Calkins** (Frank C.).

1. A geological reconnaissance across the Cascade Range near the Forty-ninth Parallel.

U. S. Geol. Surv., Bull. no. 235, 103 pp., 4 pls., 1 fig., 1904.

Describes the topography and general geology of the region, the occurrence, character, and relations of the pre-Cretaceous, Cretaceous, Tertiary, and Quaternary formations, and the occurrence and petrographic characters of the metamorphic and igneous rocks.

Smith (James Perrin).

1. Periodic migrations between the Asiatic and the American coasts of the Pacific Ocean.

Am. Jour. Sci., 4th ser., vol. 17, pp. 217–233, 1904.

Discusses geographic distribution and relations, and evidences of migrations and derivations of faunas in various provinces in Paleozoic, Mesozoic, and Tertiary time, and physiographic changes.

2. The comparative stratigraphy of the marine Trias of western America.

Cal. Acad. Sci., Proc., 3d ser., vol. 1, pp. 323–430, 10 pls., 1904.

Describes the general development of Triassic formations in the various geographic provinces of the world, their correlation and faunal characteristics, and in detail the Triassic strata of western North America, and gives systematic descriptions of Triassic genera and species of cephalopods.

Smith (Philip S.), **Smyth** (Henry Lloyd) and.

1. The copper deposits of Orange County, Vermont.

See Smyth (Henry Lloyd) and Smith (Philip S.), 1.

Smith (W. S. Tangier), **Darton** (N. H.) and.

1. Edgemont folio, South Dakota-Nebraska.

See Darton (N. H.) and Smith (W. S. Tangier), 1.

Smyth (C. H., jr.).

1. Notes on the economic geology of Oneida County [New York].

N. Y. State Mus., 56th Ann. Rept., pp. r115–r117, 1904.

Describes occurrence and production of the economic resources of this county.

Smyth (Henry Lloyd) and **Smith** (Philip S.).

1. The copper deposits of Orange County, Vermont.

Eng. & Mg. Jour., vol. 77, pp. 677–678, 1904.

Describes the general geology of the region, and the character, occurrence, and origin of the copper ores.

Souder (Harrison).

1. Mineral deposits of Santiago, Cuba.

Am. Inst. Mg. Engrs., Trans. (Atlantic City meeting, February, 1904), 14 pp., 11 figs., 1904.

Describes the occurrence and mining of manganese, copper and iron ores in the vicinity of Santiago, Cuba.

Spencer (Arthur Coe).

1. The Juneau gold belt, Alaska.

U. S. Geol. Surv., Bull. no. 225, pp. 28–42, 1904.

Describes the general geology and the occurrence and mining of gold.

2. The copper deposits of the Encampment district, Wyoming.

U. S. Geol. Surv., Professional Paper no. 25, 107 pp., 2 pls. (maps), 49 figs., 1904.

Describes the general geology and the character and occurrence of Mesozoic, Tertiary, pre-Cambrian, and igneous rocks, and copper and silver ore deposits, and discusses the origin of the copper ore bodies.

3. The geology of the Treadwell ore deposits, Douglas Island, Alaska.

Am. Inst. Mg. Engrs., Trans. (Lake Superior meeting, October, 1904), 38 pp., 12 figs, 1904 [advance separate]. Mg. & Sci. Press, vol. 89, pp. 240–241, 259–260, 274, 292–293, 310, 325–326, 344, 1904, Abstract: Mg. Rep., vol. 50, pp. 616–617, 1904.

Describes the general geology, the occurrence, character, and relations of intrusive, igneous, and sedimentary rocks, and the occurrence, geologic relations, character, and origin of the gold ore deposits.

4. Genesis of the magnetite deposits in Sussex Co., New Jersey.

Mg. Mag., vol. 10, pp. 377–381, 4 figs., 1904.

Spencer (J. W.).

1. A rejoinder to Dr. Dall's criticism on Dr. Spencer's hypothesis concerning the late union of Cuba with Florida.

Am. Geol., vol. 34, pp. 110–119, 1904.

2. The submarine great canyon of the Hudson River.

Am. Geol., vol. 34, pp. 292–293, 1904.

Describes the course, depth, etc., of the Hudson River channel.

Spencer (W. K.).

1. On the structure and affinities of Palæodiscus and Agelacrinus.

Roy. Soc., Proc., vol. 74, pp. 51–46, 1 pl., 12 figs., 1904.

The investigation described is based in part upon specimens of Agelacrinus from the Ordovician of Ohio.

Spinks (Charles H.).

1. Magnesite and its uses.

Cal. Jour. Techn., vol. 4, pp. 68–71, 1904.

Describes the occurrence and geologic relations of magnesite deposits in southern California, and discusses their origin.

Springer (Ada).

1. On some living and fossil snails of the genus Physa, found at Las Vegas, New Mexico.

Phila. Acad. Nat. Sci., Proc., vol. 54, pp. 513–516, 1 pl., 2 figs., 1902.

Spurr (Josiah Edward).

1. Preliminary report on the ore deposits of Tonopah, Nevada.

U. S. Geol. Surv., Bull. no. 225, pp. 89–110, 1 pl. (geol. map), 4 figs., 1904.

See no. 1158 of U. S. Geol. Surv., Bull. no. 240.

2. Ore deposits of Silver Peak quadrangle, Nevada.

U. S. Geol. Surv., Bull. no. 225, pp. 111–117, 1904.

Describes the general geology and the character and occurrence of the gold and silver ore deposits and the mining operations.

3. Notes on the geology of the Goldfields district, Nevada.

U. S. Geol. Surv., Bull. no. 225, pp. 118–119, 1904.

Describes the general geology and the occurrence of gold-bearing quartz veins.

4. Coal deposits between Silver Peak and Candelaria, Esmeralda County, Nev.

U. S. Geol. Surv., Bull. no. 225, pp. 289–292, 1904.

Describes the general geology of the region, the character and occurrence of the coal, and the outlook for development.

5. Alum deposit near Silver Peak, Esmeralda County, Nev.

U. S. Geol. Surv., Bull. no. 225, pp. 501–502, 1904.

Describes location, occurrence, character, and origin of this deposit.

6. The Silver Peak region, Nevada.

Eng. & Mg. Jour., vol. 77, pp. 759–760, 4 figs., 1904.

Describes the character, occurrence, and origin of the gold and silver ore deposits.

7. Geology applied to mining. A concise summary of the chief geological principles, a knowledge of which is necessary to the understanding and proper exploitation of ore deposits for mining men and students.

New York, The Engineering and Mining Journal, 326 pp., 70 figs., 1904.

8. Faulting at Tonopah, Nevada.

Abstract: Science, new ser., vol. 19, pp. 921–922, 1904.

Stanton (T. W.).

1. Note on the Cretaceous fossils [of the Bisbee quadrangle, Arizona].

   U. S. Geol. Surv., Professional Paper no. 21, p. 70, 1 pl., 1904.
   Gives a list of species identified and notes on their occurrence. A few of the more characteristic are figured.

2. See Hatcher (J. B.), 1.

Sterrett (Douglas B.).

1. Tourmaline from San Diego County, California.

   Am. Jour. Sci., 4th ser., vol. 17, pp. 459–465, 1 pl., 12 figs.
   Describes crystallographic features of this mineral.

2. A new type of calcite from the Joplin mining district.

   Am. Jour. Sci., 4th ser., vol. 18, pp. 73–76, 8 figs., 1904.
   Describes the occurrence and crystallographic characters.

Sterrett (Douglass B.), **Pratt** (Joseph Hyde) and.

1. The tin deposits of the Carolinas.

   See Pratt (J. H.) and Sterrett (D. B.), 1.

Stevens (Blamey).

1. On the differentiation of igneous magmas and formation of ores.

   Eng. & Mg. Jour., vol. 77, pp. 71–72, 1904.

2. Acidic magmas, their exhalations and residues

   Eng. & Mg. Jour., vol. 77, p. 351, 1904.

Stevenson (John J.).

1. Carboniferous of the Appalachian basin.

   Geol. Soc. Am., Bull., vol. 15, pp. 37–210, 1904.
   Describes in detail the distribution, character, and geologic relations of the various beds of the Pottsville of the Pennsylvanian series in the Appalachian region, giving numerous detailed sections, and discusses their nomenclature and correlation.

2. Memoir of J. Peter Lesley.

   Geol. Soc. Am., Bull., vol. 15, pp. 532–541, 1 pl. (port.), 1904.
   Includes a list of his published writings.

Stevenson (Robert).

1. The deposition of ores from an igneous magma.

   Eng. & Mg. Jour., vol. 77, pp. 272–273, 1904.

2. The deposition of ores from an igneous magma.

   Eng. & Mg. Jour., vol. 77, pp. 472–474, 4 figs., 1904.
   Illustrates the formation of an igneous magma by an example based upon geologic structure in Alaska.

Stone (Ralph W.).

1. The Elders Ridge coal field, Pennsylvania.

   U. S. Geol. Surv., Bull. no. 225, pp. 311–324, 1904.
   Describes location and geologic structure of the field and the occurrence and character of the coals.

Stone (Ralph W.)—Continued.

2. Oil and gas fields of eastern Greene County, Pa.

U. S. Geol. Surv., Bull. no. 225, pp. 396–412, 1 fig., 1904.

Describes the location and general geology of the field, the stratigraphic position and character of the oil and gas producing strata, the geologic structure of the region, and the production of oil and gas.

Stoneham (W. J.).

1. A Nevada coal field.

Eng. & Mg. Jour., vol. 77, pp. 1009–1010, 1904.

Describes location and general geology of the field and the occurrence and character of the coal.

Storms (W. H.).

1. The genesis and character of ore deposits.

Mg. & Sci. Press, vol. 88, pp. 193–194, 1904.

2. The Mother Lode in Tuolumne County, California.

Mg. & Sci. Press, vol. 89, pp. 189, 210–211, 237, 257, 271–272, 306–307, 326–327, 343, 21 figs., 1904.

Describes the geologic relations, occurrence, and character of the Mother Lode, the occurrence of the gold-ore bodies, and the mining operations.

Stose (George W.).

1. Barite in southern Pennsylvania and pure limestone in Berkeley County, W. Va.

U. S. Geol. Surv., Bull. no. 225, pp. 515–517, 1904.

Describes the stratigraphy and geologic structure of the Cumberland Valley and the occurrence of barite in this region; describes also the occurrence and quarrying of limestone at Martinsburg, W. Va.

2. Physiographic studies in southern Pennsylvania.

Jour. Geol., vol. 12, pp. 473–484, 3 figs., 1904.

Describes physiographic features in the Chambersburg and Mercersburg quadrangles and their origin, including the peneplains and their age.

Stretch (R. H.).

1. The Montezuma district, Nevada.

Eng. & Mg. Jour., vol. 78, pp. 5–6, 1904.

Describes the general geology and the occurrence of silver-lead ore deposits.

2. Copper ores in the Cascade Mountains.

Eng. & Mg. Jour., vol. 78, pp. 789–790, 3 figs., 1904.

Describes the occurrence, character, and geologic relations of copper-ore deposits in the State of Washington.

Struthers (Joseph) and **Pratt** (Joseph Hyde).

1. Tin.

U. S. Geol. Surv., Min. Res. of U. S. for 1903, pp. 335–349, 1904.

Includes an account of the occurrence, character, and geologic relations of the rocks in which the tin ores of North Carolina and South Carolina occur, and of the mineralogical and chemical character of the ores.

Stübel (Alphons).

1. Martinique und St. Vincent. Eine Studie zur wissenschaftlicher Beurteilung der Ausbrüche auf den kleinen Antillen, 1902.

    Leipzig, Max Weg, 1903. 36 pp., 6 figs., 4to.

2. Rückblick auf die Ausbruchsperiode des Mont Pelé auf Martinique 1902–1903 vom theoretischen Gesichtspunkte aus.

    Leipzig, Max Weg, 1904. 24 pp., 20 figs., 4°. (Not seen.)

Stubbs (Wm. C.).

1. Report on the agricultural resources and capabilities of Hawaii.

    U. S. Dept. Agric., Office of Exper. Stations, Bull. no. 95, 100 pp., 27 pls., 1901.
    Includes a brief account of the geology of Hawaii.

Stupart (R. F.).

1. Seismology in Canada.

    Can. Roy. Soc., Proc. & Trans., 2d ser., vol. 9, sect. 3, pp. 69–71, 1903.
    Describes briefly earthquake observations by seismographs in Toronto and Victoria, Canada.

Sutton (W. J.).

1. The geology and mining of Vancouver Island.

    Manchester Geol. & Mg. Soc., Trans., vol. 28, pp. 307–314, 1904.
    Describes the general geology and the occurrence and economic development of coal and copper ore deposits.

T.

Taff (Joseph A.).

1. Maps of segregated coal lands in the McAlester district, Choctaw Nation, Indian Territory, with descriptions of the unleased segregated coal lands.

    U. S., Dept. Interior, Circular no. 1, 59 pp., 2 maps, 1904.
    Describes the character and occurrence of the coal beds and the quality of the coal.

2. Maps of segregated coal lands in the Wilburton-Stigler district, Choctaw Nation, Indian Territory, with descriptions of the unleased segregated coal lands.

    U. S., Dept. Interior, Circular no. 2, 47 pp., 2 maps, 1904.
    Describes the occurrence and character of the coal beds and quality of the coal.

3. Maps of segregated coal lands in the Howe-Poteau district, Choctaw Nation, Indian Territory, with description of the unleased segregated coal lands.

    U. S., Dept. Interior, Circular no. 3, 48 pp., 2 maps, 1904.
    Describes the occurrence and character of coal beds and quality of the coal.

4. Maps of segregated coal lands in the McCurtain-Massey district, Choctaw Nation, Indian Territory, with description of the unleased segregated coal lands.

    U. S., Dept. Interior, Circular no. 4, 54 pp., 2 maps, 1904.
    Describes the occurrence and character of the coal beds and the quality of the coal.

Taff (Joseph A.)—Continued.

5. Maps of segregated coal lands in the Lehigh-Ardmore districts, Choctaw and Chickasaw Nations, Indian Territory, with descriptions of the unleased segregated coal lands.

U. S., Dept. Interior, Circular no. 5, 39 pp., 2 maps, 1904.

Describes the occurrence and character of the coal beds and the quality of the coal.

6. Description of the unleased segregated asphalt lands in the Chickasaw Nation, Indian Territory.

U. S., Dept. Interior, Circular no. 6, 14 pp., 1904.

Describes the occurrence and character of asphalt deposits.

7. Preliminary report on the geology of the Arbuckle and Wichita Mountains in Indian Territory and Oklahoma.

U. S. Geol. Surv., Professional Paper no. 31, pp. 11–81, 8 pls., 1 fig., 1904.

Describes the physiographic features and history of the region, the occurrence, character, and relations of pre-Cambrian igneous rocks and Cambrian, Ordovician, Silurian, Devonian, Carboniferous, and Cretaceous sedimentary rocks, and the geologic structure of the Arbuckle and Wichita Mountains.

Tallmon (Marion Clover), **Morgan** (William Conger) and.

1. A fossil egg from Arizona.

See Morgan (W. C.) and Tallmon (M. C.), 1.

2. A peculiar occurrence of bitumen and evidence as to its origin.

See Morgan (W. C.) and Tallmon (M. C.), 2.

Tarr (Ralph S.).

1. New physical geography.

New York, The Macmillan Company, xiii, 457 pp., 568 figs., 1904.

2. Artesian well sections at Ithaca, N. Y.

Jour. Geol., vol. 12, pp. 69–82, 4 figs., 1904.

Gives records of well borings, describes the materials (Glacial deposits) passed through and discusses the geologic history of the Ithaca delta.

3. Hanging valleys in the Finger Lake region of central New York.

Am. Geol., vol. 33, pp. 271–291, 5 pls., 19 figs., 1904.

Describes various physiographic features bearing on the question of the origin of these valleys.

Tassin (Wirt).

1. The Persimmon Creek meteorite [North Carolina].

U. S. Nat. Mus., Proc., vol. 27, pp. 955–959, 2 pls., 1 fig., 1904.

Describes occurrence, characters, and composition.

Thomas (Kirby).

1. Methods of mining in the Vermilion iron district of Minnesota.

Mg. & Sci. Press, vol. 88, pp. 133–134, 5 figs., 1904.

Describes the occurrence, character, and methods of mining the iron ores.

2. Notes on the geology of a new iron district in Minnesota.

Mines & Minerals, vol. 25, p. 27, 1904.

Discusses the occurrence of iron-bearing formations.

Tippenhauer (L. Gentil).

1. Beiträge zur Geologie Haitis.

   Petermanns Mitteilungen, Bd. 45, pp. 25–29, 153–155, 201–204, 3 pls. (maps), 2 figs., 1899.

   Describes the geology of portions of the Island of Hayti.

2. Beiträge zur Geologie Haitis.

   Petermanns Mitteilungen, Bd. 47, pp. 121–127, 169–178, 193–199, 5 pls. (maps), 5 figs., 1901.

   Describes the general geology of portions of the Island of Hayti, and the occurrence and character of deposits of iron and copper ores and lignite.

Todd (James E.).

1. The newly discovered rock at Sioux Falls, South Dakota.

   Am. Geol., vol. 33, pp. 35–39, 1904.

   Describes occurrence and characters of a diabasic rock discovered at Sioux Falls.

2. Benton formation in eastern South Dakota.

   Geol. Soc. Am., Bull., vol. 15, pp. 569–575, 1 fig., 1904.

   Describes the character and occurrence of the Benton formation and its subdivisions in South Dakota, and corrects the former erroneous interpretation of the Greenhorn chalky limestone.

3. Geology of South Dakota.

   Black Hills, South Dakota. Papers read before the Black Hills Mining Men's Assoc., pp. 128–135, 1904. Abstract: Mg. Rep., vol. 50, pp. 615–616, 1904.

   Gives a general account of the geology of the State of South Dakota.

4. Huron folio, South Dakota.

   U. S. Geol. Surv., Geol. Atlas of U. S., folio no. 113, 1904.

   Describes the topography, drainage, and general geology, the character, occurrence, and relations of Cretaceous strata and Quaternary deposits and the geologic history, and discusses the underground water resources of the area.

Todd (James E.) and **Hall** (C. M.).

1. Geology and water resources of part of the lower James River valley, South Dakota.

   U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 90, 47 pp., 23 pls., 1904.

   Describes occurrence and character of Algonkian, Cretaceous, and Quaternary formations, the geologic history of the region, and the water supply, especially from artesian wells, giving records of borings.

2. De Smet folio, South Dakota.

   U. S. Geol. Surv., Geol. Atlas of U. S., folio no. 114, 1904.

   Describes the general geology, the character, occurrence, and relations of Cretaceous strata and Quaternary deposits, the geologic history, and the economic resources, and discusses in detail the water resources of the area.

Tower (W. S.).

1. The development of cut-off meanders.

   Am. Geog. Soc., Bull., vol. 36, pp. 589–599, 3 figs., 1904.

Turnbull (J. M.).

1. Geological sketch of the Bankhead [Alberta] coal field.

Can. Mg. Rev., vol. 23, pp. 213–214, 4 pls., 1 fig., 1904.

Describes the general geology, the occurrence of the coal beds of Cretaceous age, and the character and mining of the coal.

Turner (H. W.).

1. Native copper in greenstone from the Pacific coast.

Eng. & Mg. Jour., vol. 77, p. 276, 1904.

Discusses the occurrence and origin of native copper.

2. Notes on contact-metamorphic deposits in the Sierra Nevada Mountains.

Am. Inst. Mg. Engrs., Trans., vol. 34, pp. 666–668, 1904.

See no. 1217 of the Bibliography for 1903, U. S. Geol. Surv., Bull. no. 240.

3. The geological features of the gold production of North America. [In discussion of paper of Waldemar Lindgren.]

Am. Inst. Mg. Engrs., Trans., vol. 34, p. 921, 1904.

A note in regard to the geologic position of gold ores in the vicinity of Silver Peak, Nevada.

4. Observations on Mother Lode gold deposits, California.

Am. Inst. Mg. Engrs., Trans., vol. 34, pp. 973–974, 1904.

See no. 1218 of the Bibliography for 1903, U. S. Geol. Surv., Bull. no. 240.

Tuttle (Gêorge W.).

1. Recent changes in the elevation of land and sea in the vicinity of New York City.

Am. Jour. Sci., 4th ser., vol. 17, pp. 333–346, 1904.

Discusses detailed investigations upon tidal variation and their bearing upon the question of the elevation or subsidence of the land.

Tyrrell (J. Burr).

1. Report on explorations in the northeastern portion of the district of Saskatchewan and adjacent parts of the district of Keewatin.

Can. Geol. Soc., Ann. Rept., new ser., vol. 13, 48 pp., 1 pl., and map, 1903. (Published separately, 1902.)

Describes the occurrence and characters of Pleistocene deposits and Cambro-Silurian and pre-Cambrian rocks, includes a list of Glacial striæ and observations on the geologic structure, igneous rocks, and minerals of the region examined.

2. Crystosphenes or buried sheets of ice in the Tundra of northern America.

Jour. Geol., vol. 12, pp. 232–236, 1 fig., 1904.

Describes the occurrence, character, and mode of formation of the masses of ice for which the names crystosphene and crystocrene are proposed.

U.

Udden (J. A.).

1. The geology of the Shafter silver-mine district, Presidio County, Texas.

Tex. Univ. Min. Surv., Bull. no. 8, 60 pp., 11 figs., 2 pls., 1904.

Describes the physiographic features briefly and in detail the occurrence, character, and geologic relations of Carboniferous and Cretaceous strata, igneous rocks, and mineral deposits, mainly silver ores.

Ulrich (Edward Oscar).

1. Fossils and age of the Yakutat formation. Description of collections made chiefly near Kadiak, Alaska.

Harriman Alaska Expedition, vol. 4, pp. 125–146, 11 pls., 1904.

Discusses the geologic age of the Yakutat formation from the evidence of its fossils and gives systematic descriptions of these.

2. Determination and correlation of formations [of northern Arkansas].

U. S. Geol. Surv., Professional Paper no. 24, pp. 90–113, 1904.

Discusses the occurrence, character, geologic relations, and correlation of Ordovician, Silurian, Devonian, and Carboniferous formations of northern Arkansas.

3. Systematic paleontology of the Miocene deposits of Maryland: Hydrozoa.

Md. Geol. Surv., Miocene, pp. 433–438, 1 pl., 1904.

Ulrich (Edward Oscar) and **Bassler** (Ray S.).

1. A revision of the Paleozoic bryozoa. Part I. On genera and species of Ctenostomata.

Smith. Misc. Coll., vol. 45 (Quart. Issue, vol. 1, pts. 3 and 4), pp. 256–294, 4 pls., 2 figs., 1904.

2. A revision of the Paleozoic bryozoa. Part II. On genera and species of Trepostomata.

Smith. Misc. Coll., vol. 47 (Quart. Issue, vol. 2, no. 1), pp. 15–55, 9 pls., 1904.

3. Systematic paleontology of the Miocene deposits of Maryland: Ostracoda.

Md. Geol. Surv., Miocene, pp. 98–130, 4 pls., 1904.

4. Systematic paleontology of the Miocene deposits of Maryland: Bryozoa.

Md. Geol. Surv., Miocene, pp. 404–429, 10 pls., 1904.

United States Geological Survey.

1. The United States Geological Survey, its origin, development, organization, and operations.

U. S. Geol. Surv., Bull. no. 227, 205 pp., 9 pls., 5 figs., 1904.

Describes the organization and work of the U. S. Geological Survey and gives a full list of its publications.

Upham (Warren).

1. Moraines and eskers of the last glaciation in the White Mountains.

   Am. Geol., vol 33, pp. 7-14, 1904.

   Calls attention to previous work in this region and describes the character and occurrence of moraines and eskers and distribution of boulders.

2. Boulders due to rock decay.

   Am. Geol., vol. 33, pp. 370-375, 1904.

   Describes occurrence and origin of boulders at Butte, Montana, concludes that many Glacial boulders are the result of rock decay, and discusses the occurrence and distribution of Glacial boulders.

3. Erosion on the Great Plains and on the Cordilleran Mountain belt.

   Am. Geol., vol. 34, pp. 35-39, 1904.

   Discusses the physiographic history of the Great Plains and Cordilleran regions during Tertiary and Quaternary times.

4. Age of the Missouri River.

   Am. Geol., vol. 34, pp. 80-87, 1904.

   Includes observations on the geologic history and physiographic features of the interior portion of the North American continent.

5. Outer Glacial drift in the Dakotas, Montana, Idaho, and Washington.

   Am. Geol., vol. 34, pp. 151-162, 1904.

   Reviews the work of tracing drift boundaries across the United States, and describes the occurrence and character of the Glacial drift deposits in the northwestern States.

6. Glacial and modified drift in and near Seattle, Tacoma, and Olympia [Washington].

   Am. Geol., vol. 34, pp. 203-214, 1 pl., 1904.

   Describes the probable successive stages in glaciation, and the character and occurrence of Glacial drift deposits.

V.

Vaillant (Léon).

1. Sur la présence du tissu osseux chez certains poissons des terrains palæozoiques de Canyon City, Colorado.

   Acad. des Sci. [Paris], Compt. rend., t. 134, pp. 1321-1322, 1902.

   Notes the presence of osseous tissue in certain fish remains from paleozoic strata near Canyon City, Colorado.

Van Hise (Charles Richard).

1. A treatise on metamorphism.

   U. S. Geol. Surv., Mon., vol. 47, 1286 pp., 13 pls., 32 figs., 1904.

2. Report on geophysics.

   Carnegie Inst. of Wash., Yearb. no. 2, 1903, pp. 173-184, 1904.

   Discusses establishment of a geophysical laboratory and the work to be done therein.

3. Lake Superior geological work.

   Abstract: Mg. World, vol. 21, pp. 197-198, 2 figs., 1904.

   Gives general observations on geologic work in the Lake Superior iron region.

   Extract from paper read before the Lake Superior Mining Institute.

Van Hise (Charles Richard)—Continued.

4. The problems of geology.

   Jour. Geol., vol. 12, pp. 589–616, 1904.

Van Vleet (A. H.).

1. [Second biennial report of the Department of Geology and Natural History of Oklahoma.]

   Okla., Dept. Geol. & Nat. Hist., 2d Bien. Rept., pp. 9–16, 1902.

   Outlines the work and status of the Department of Geology and Natural History of the Territory of Oklahoma.

Vaughan (T. Wayland).

1. Fuller's earth of southwestern Georgia and western Florida.

   U. S. Geol. Surv., Min. Res., 1901, pp. 922–934, 1902.

   Describes the occurrence of fullers's earth deposits in Georgia and Florida, and discusses their geologic age from the evidence of fossils.

2. Some recent changes in the nomenclature of West Indian corals.

   Wash. Biol. Soc., Proc., vol. 15, pp. 53–58, 1902.

3. Systematic paleontology of the Miocene deposits of Maryland: Anthozoa.

   Md. Geol. Surv., Miocene, pp. 438–447, 8 pls., 1904.

4. A Californian Tertiary coral reef and its bearing on American recent coral faunas.

   Abstracts: Science, new ser., vol. 19, p. 503, 1904; Geol. Centralbl., Bd. 5, p. 526, 1904.

Vaux (George) and **Vaux** (William S.)

1. Les variations périodiques des glaciers. IX^{me} rapport. Colombie anglaise et Alberta.

   Arch. des Sci. phys. et nat., 4th pér., t. 18, pp. 194–195, 1904.

Veatch (A. C.).

1. Some peculiar artesian conditions on Long Island, N. Y.

   Abstract: Science, new ser., vol. 19, pp. 795–796, 1904.

Vicaire (A.).

1. Développements récents des industries minière et métallurgique en Colombie britannique.

   Ann. des Mines, 10^{e} sér., t. 5, pp. 297–388, 10 figs., 1904.

   Includes an account of the geology of the Crow's Nest Pass coal field and the Boundary mining district.

Villarello (Juan D.).

1. Análisis y clasificación de un granate procedente del mineral de Pihuamo, Jalisco [México].

   México, Inst. Geol., Par., t. 1, pp. 75–80, 1904.

   Describes the chemical composition and discusses the systematic position of a garnet occurring at Pihuamo, Mexico.

2. Estudio de la teoría química propuesta por el Sr. D. Andrés Almaraz para explicar la formación del petróleo de Aragón, México.

   México, Inst. Geol., Par., t. 1, pp. 95–111, 1904.

   Discusses the chemical theory for the origin of the petroleum of Aragon, proposed by Andrés Almaraz.

Villarello (Juan D.)—Continued.

3. Estudio de una muestra de mineral asbestiforme procedente del rancho del Ahuacatillo, Distrito de Zinapécuaro, Michoacán [México].

México, Inst. Geol., Par., t. 1, pp. 133–149, 1904.

Gives a description and an analysis, and discusses the classification of an asbestiform mineral occurring in the State of Michoacan, Mexico.

4. Estudio de la hidrología interna de los alrededores de Cadereyta Mendez, Estado de Queretaro [México].

México, Inst. Geol., Par., t. 1, pp. 155–208, 1 pl., 1904.

Discusses the hydrology and geology of the region.

5. Descripción de los criaderos de mercurio de Chiquilistán (Jalisco) [México].

Soc. Cient. Ant. Alz., Mem. y Rev., t. 20, pp. 389–397, 1904.

Describes the occurrence, geologic relations, and character of ore deposits containing mercury in the State of Jalisco, Mexico.

Villaseñor (F.).

1. Análisis de las cenizas de la erupción del volcán de Santa María (Guatemala), ocurrida el 24 de octubre de 1902, recogidas en Comitán.

Secretaría de Fomento [México], Bol., 2ª ép., año 2, no. 7, II, pp. 279–280, 1903.

Discusses the composition of cinders ejected by the volcano of Santa Maria in Guatemala.

Vogdes (Anthony W.).

1. A bibliography relating to the geology, paleontology, and mineral resources of California.

Cal. State Mg. Bur., Bull. no. 30, pp. 7–258, 1904.

W.

Walcott (Charles D.).

1. Twenty-fifth annual report of the Director of the United States Geological Survey to the Secretary of the Interior, 1903–4.

Washington, Government Printing Office, 1904. 388 pp., 25 pls. and 2 figs.

Gives an account of the work of the U. S. Geological Survey during the fiscal year 1903–4.

Walker (T. L.).

1. The Geological Survey of Canada as an educational institution.

Can. Mg. Inst., Jour., vol. 7. Advance separate, 15 pp., 1904.

Ward (Henry A.).

1. The Canyon City meteorite from Trinity County, California.

Am. Jour. Sci., 4th ser., vol. 17, pp. 383–384, 1 fig., 1904.

Describes source, character, and composition.

2. The Willamette [Oregon] meteorite.

Rochester Acad. Sci., Proc., vol. 4, pp. 137–148, 6 pls., 1904; Sci. Am. Suppl., vol. 58, pp. 23838–23840, 9 figs., 1904.

Describes the discovery, location, and characters.

Ward (Henry A.)—Continued.

3. Catalogue of the Ward-Coonley collection of meteorites.

Chicago, 113 pp., 9 pls., 1904. (Private publication.)
Contains notes on the character and occurrence of meteorites.

Warren (C. H.).

1. Petrographical notes on the rocks of the Weston aqueduct [Massachusetts].

Tech. Quart., vol. 17, pp. 117–123, 1904.
Describes their occurrence and petrographic characters.

Warwick (A. W.).

1. The iron ores of the Uintah Mountains.

Mg. Rep., vol. 50, pp. 166–167, 1904.
Describes the geology and the character and occurrence of iron-ore deposits.

Washburne (C. W.).

1. The distribution of placer gold in Oregon.

Oreg. Univ., Bull., new ser., vol. 1, no. 4, pp. 18–19, 1904.

2. Beach gold and its source.

Oreg. Univ., Bull., new ser., vol. 1, no. 4, pp. 19–21, 1904.
Describes the occurrence of gold in the sands of the coast of Oregon and discusses its source.

Washington (Henry Stephens).

1. The superior analyses of igneous rocks from Roth's Tabellen, 1869 to 1884, arranged according to the quantitative system of classification.

U. S. Geol. Surv., Professional Paper no. 28, 68 pp., 1904.
NOTE.—The analyses in this paper have not been listed in the index of this bibliography.

2. Manual of the chemical analysis of rocks.

New York, John Wiley & Sons. 183 pp., 1904.
Describes fully methods of analysis of rocks.

3. Quantitative distribution of rock magmas.

Abstract: Geol. Soc. Am., Bull., vol. 14, p. 533, 1904.
See no. 1268 of U. S. Geol. Surv., Bull. no. 240.

Watson (Lawrence W.).

1. Francis Bain, geologist.

Can. Roy. Soc., Proc. & Trans., 2d ser., vol. 9, sect. 4, pp. 135–142, 1903.
Includes a list of his papers.

Watson (Thomas Leonard).

1. Geological relations of the manganese ore deposits of Georgia.

Am. Inst. Mg. Engrs., Trans., vol. 34, pp. 207–253, 970–973, 20 figs., 1904; Denison Univ., Sci. Lab., Bull., vol. 12, art. 9, pp. 147–198, 20 figs., 1904.
See no. 1272 of the Bibliography for 1903, U. S. Geol. Surv., Bull. no. 240, 1904.

2. The yellow ocher deposits of the Cartersville district, Bartow County, Georgia.

Am. Inst. Mg. Engrs., Trans., vol. 34, pp. 643–666, 8 figs., 1904; Denison Univ., Sci. Lab., Bull., vol. 12, art. 10, pp. 199–221, 3 pls., 2 figs., 1904.
See no. 1271 of the Bibliography for 1903, U. S. Geol. Surv., Bull. no. 240.

Watson (Thomas Leonard)—Continued.

3. The leopardite (quartz porphyry) of North Carolina.

Jour. Geol., vol. 12, pp. 215–224, 4 figs., 1904; Denison Univ., Sci. Lab., Bull., vol. 12, art. 11, pp. 223–230, 2 pls., 1904.

Describes occurrence, megascopic and microscopic characters, and chemical composition.

4. Orbicular gabbro-diorite from Davie County, North Carolina.

Jour. Geol., vol. 12, pp. 294–303, 2 figs., 1904.

Describes the occurrence and the megascopic and microscopic characters.

5. Granites of North Carolina.

Jour. Geol., vol. 12, pp. 373–407, 7 figs., 1904.

Describes types of granite occurring in North Carolina, their lithologic characters, structural features, and geographic distribution in the State.

6. The Seminole copper deposit of Georgia.

U. S. Geol. Surv., Bull no. 225, pp. 182–186, 1904.

Describes the general geology, structural features, and the character and occurrence of the copper ores.

7. A preliminary report on the bauxite deposits of Georgia.

Ga. Geol. Surv., Bull. no. 11, 169 pp., 12 pls., 3 figs., and map, 1904.

Describes the general geology of the bauxite region of Georgia, the character, occurrence, and origin of bauxite deposits, and the mining operations.

8. Structural relations of the granites of North Carolina.

Abstract: Science, new ser., vol. 19, p. 526, 1904.

Weatherbe (D'Arcy).

1. Boring machines.

Nova Scotia, Dept. Mines, Rept. for 1903, pp. 69–82, 1904.

Contains records of strata passed through in borings in Nova Scotia.

Weed (Walter Harvey).

1. Gypsum deposits in Montana.

U. S. Geol. Surv., Bull. no. 223, pp. 74–75, 1904.

Describes character, occurrence, and geologic relations of gypsum deposits in Montana.

2. Copper deposits in Georgia.

U. S. Geol. Surv., Bull. no. 225, pp. 180–181, 1904.

Describes occurrence and character of copper ores.

3. The Griggstown, N. J., copper deposit.

U. S. Geol. Surv., Bull. no. 225, pp. 187–189, 1904.

Describes the general geology and the occurrence and character of the copper ore deposits.

4. Notes on the copper mines of Vermont.

U. S. Geol. Surv., Bull. no. 225, pp. 190–199, 1904.

Describes the general geology, the character and occurrence of the copper ore deposits, and the mining developments.

5. Original native gold in igneous rocks.

Eng. & Mg. Jour., vol. 77, pp. 440–441, 1904.

Weed (Walter Harvey)—Continued.

6. Occurrence and distribution of copper in the United States.

Mg. Mag., vol. 10, pp. 185–193, 1 pl., 10 figs., 1904.

Describes the occurrence, formation, and geologic relations of copper ores in various parts of the United States.

7. Dilation fissures and their contained ores.

Abstract: Science, new ser., vol. 20, p. 761, 1904.

Weeks (Fred Boughton).

1. Bibliography and index of North American geology, paleontology, petrology, and mineralogy for the year 1903.

U. S. Geol. Surv., Bull. no. 240, 243 pp., 1904.

2. Notes on the wells, springs, and general water resources of New York.

U. S. Geol. Surv., Water-Supply and Irrigation Paper no. 102, pp. 169–206, 1904.

Weidman (Samuel).

1. Widespread occurrence of fayalite in certain igneous rocks of central Wisconsin.

Jour. Geol., vol. 12, pp. 551–561, 3 figs., 1904.

Describes the occurrence in Wisconsin, character, chemical composition, and relations to associated rocks, and discusses the origin and occurrences elsewhere of fayalite.

2. Preliminary report on the soils and agricultural conditions of north central Wisconsin.

Wis. Geol. & Nat. Hist. Surv., Bull. no. 11, 68 pp., 10 pls., 1903.

Describes topography, general geology, water supply, and character and origin of soil formations.

3. The Baraboo iron-bearing district of Wisconsin.

Wis. Geol. & Nat. Hist. Surv., Bull. no. 13, 190 pp., 23 pls. (includ. geol. map in pocket), 1904.

Describes the occurrence, megascopic and microscopic characters, and geologic relations of pre-Cambrian igneous rocks and sedimentary strata, and gives a general account of Cambrian and Ordovician sedimentary rocks and Glacial drift deposits, and discusses the ground water and the occurrence, character, and origin of the iron-ore deposits.

4. Iron ores of Wisconsin, with special reference to the Baraboo district.

Wis. Engineer, vol. 9, pp. 31–45, 3 figs., 1904. Abstract: Eng. & Mg. Jour., vol. 79, pp. 610–612, 1905.

Describes the character, occurrence, and geologic relations of the iron-ore deposits of Wisconsin and the geology of the Baraboo Range.

Wells (J. Walter).

1. Molybdenite—its occurrence, concentration, and uses.

Can. Mg. Inst., Jour., vol. 6, pp. 47–65, 4 figs., 1904.

See no. 1292 of U S. Geol. Surv., Bull. no. 240.

Wendeborn (B. A.).

1. Die Tätigkeit heisser Quellen in den Gängen von Wedekind, Nevada, V. S. N.-A.

Berg-und hüttenm. Zeit., Jahrg. 63, pp. 265–266, 1904.

Discusses the ore deposits and their formation by the agency of heated water.

2. Die Quecksilberablagerungen in Oregon.

Berg-und hüttenmännische Zeitung, Jahrg. 63, pp. 274–277, 1904.

Describes occurrence, character, and geologic relations of quicksilver-ore deposits in Oregon.

Wenstrom (Olof).

1. Mineral deposits of Santiago, Cuba. [In discussion of paper of Harrison Souder.]

Am. Inst. Mg. Engrs., Trans. (Atlantic City meeting, February, 1904), 2 pp.

Contains observations on the geologic structure of the copper deposits.

Wheeler (H. A.).

1. Notes on the source of the southeast Missouri lead.

Eng. & Mg. Jour., vol. 77, pp. 517–518, 1904.

Discusses the origin of the lead-ore deposits of this region.

White (Charles H.).

1. The Appalachian River versus a Tertiary trans-Appalachian River in eastern Tennessee.

Jour. Geol., vol. 12, pp. 34–39, 1904.

Discusses the evidences for the drainage system of the southern Appalachian region in Cretaceous and Tertiary time.

White (David).

1. Deposition of the Appalachian Pottsville.

Geol. Soc. Am., Bull., vol. 15, pp. 267–282, 1 pl., 1904.

Describes character and occurrence of Carboniferous deposits of Pottsville age in the Appalachian region, and the extent, figure, and general characteristics of the basin in which the sedimentation took place, and sketches the geologic history of the Appalachian region in Pottsville time.

2. Permian elements in the Dunkard flora.

Abstract: Geol. Soc. Am., Bull., vol. 14, pp. 538–542, 1903.

See no. 1297 of U. S. Geol. Surv., Bull. no. 240.

3. Notes on the deposition of the Appalachian Pottsville.

Abstract: Science, new ser., vol. 19, pp. 24, 532, 1904.

4. A new seed-bearing fern.

Abstract: Science, new ser., vol. 20, p. 840, 1904.

5. The seeds of Aneimites.

Smith. Misc. Coll., vol. 47 (Quar. Issue, vol. 2, pt. 3), pp. 322–331, 2 pls., 1904.

6. See Campbell (Marius R.), 3.

White (Israel C.).

1. Map showing occurrence of coal, oil, and gas in West Virginia.

W. Va. Geol. Surv., 1904.

White (Israel C.)—Continued.

2. Petroleum and natural gas. Precise levels.

W. Va. Geol. Surv., vol. 1A, 625 pp., 1904.

Gives a historical sketch of the subject and describes the occurrence of petroleum and natural gas, including many records of borings and precise surface levels.

3. [In discussion of paper by R. Pearson on "The discovery of natural gas in Sussex, Heathfield district."]

Inst. Mg. Engrs. [Engl.], Trans., vol. 26, pp. 506–507 [1904].

A short note in regard to the occurrence of natural gas in the United States.

Whiteaves (J. F.).

1. The Canadian species of Trocholites.

Ottawa Nat., vol. 18, pp. 13–18, 1904.

2. Description of a new genus and species of rugose corals from the Silurian rocks of Manitoba.

Ottawa Nat., vol. 18, pp. 113–114, 1904.

3. Uintacrinus and Hemiaster in the Vancouver Cretaceous.

Am. Jour. Sci., 4th ser., vol. 18, pp. 287–289, 1904.

Describes the occurrence and character of fossil echinoderms from Vancouver Island and gives a description of Hemiaster vancouverensis n. sp.

Whitfield (R. P.).

1. Notice of a new genus and species of Lower Carboniferous bryozoan.

Am. Mus. Nat. Hist., Bull., vol 20, p. 469, 1 pl., 1904.

2. Notice of a remarkable case of reproduction of lost parts shown on a fossil crinoid.

Am. Mus. Nat. Hist., Bull., vol. 20, pp. 471–472, 2 pls., 1904.

3. Note on some worm (?) burrows in rocks of the Chemung group of New York.

Am. Mus. Nat. Hist., Bull., vol. 20, pp. 473–474, 1 pl., 1904.

Whitney (Milton).

1. Field operations of the Bureau of Soils, 1903.

U. S. Dept. Agric., Bur. Soils, 5th Rept., 1904. 1310 pp., 3 pls., 61 figs. and 78 maps (in separate case).

Contains the following papers:

Field operations of the Bureau of Soils, 1903. General review of the work, by Milton Whitney, pp. 33–37.

Soil survey of the Connecticut Valley, by Elmer O. Fippin, pp. 39–61.

Soil survey of the Syracuse area, New York, by F. E. Bonsteel and others, pp. 63–89.

Soil survey of the Long Island area, New York, by J. A. Bonsteel and party, pp. 91–128.

Soil survey of the Lockhaven area, Pennsylvania, by J. O. Martin, pp. 129–142.

Soil survey of the Dover area, Delaware, by F. E. Bonsteel and O. L. Ayres, pp. 143–164.

Soil survey of Worcester County, Md., by F. E. Bonsteel and William T. Carter, jr., pp. 165–189.

Soil survey of the Leesburg area, Virginia, by William T. Carter, jr., and W. S. Lyman, pp. 191–231.

Soil survey of the Norfolk area, Virginia, by J. E. Lapham, pp. 233–252.

Soil survey of the Craven area, North Carolina, by William G. Smith and George N. Coffey, pp. 253–278.

Soil survey of the Asheville area, North Carolina, by J. E. Lapham and F. N. Meeker, pp. 279–297.

Whitney (Milton)—Continued.

Soil survey of the Campobello area, South Carolina, by A. W. Mangum and Aldert S. Root, pp. 299-315.

Soil survey of the Fort Valley area, Georgia, by William G. Smith and William T. Carter, jr., pp. 317-330.

Soil survey of Gadsden County, Fla., by Elmer O. Fippin and Aldert S. Root, pp. 331-353.

Soil survey of the Fort Payne area, Alabama, by Grove B. Jones and M. E. Carr, pp. 355-371.

Soil survey of the Huntsville area, Alabama, by Frank Bennett, jr., and A. M. Giffen, pp. 373-392.

Soil survey of the Mobile area, Alabama, by R. T. Avon Burke and party, pp. 393-403.

Soil survey of the McNeill area, Mississippi, by William G. Smith and William T. Carter, jr., pp. 405-418.

Soil survey of Ouachita Parish, La., by Thomas D. Rice, pp. 419-438.

Soil survey of the New Orleans area, Louisiana, by Thomas D. Rice and Lewis Griswold, pp. 439-459.

Soil survey of Acadia Parish, La., by Thomas D. Rice and Lewis Griswold, pp. 461-485.

Soil survey of the Nacogdoches area, Texas, by W. Edward Hearn and James L. Burgess, pp. 487-499.

Soil survey of the Lufkin area, Texas, by W. Edward Hearn and party, pp. 501-510.

Soil survey of the Woodville area, Texas, by J. E. Lapham and party, pp. 511-520.

Soil survey of the Jacksonville area, Texas, by W. Edward Hearn and James L. Burgess, pp. 521-531.

Soil survey of the Paris area, Texas, by Thomas A. Caine and A. E. Kocher, pp. 533-562.

Soil survey of Miller County, Ark., by J. O. Martin and E. P. Carr, pp. 563-576.

Soil survey of the Pikeville area, Tennessee, by Henry J. Wilder and W. J. Geib, pp. 577-603.

Soil survey of Davidson County, Tenn., by William G. Smith and Hugh H. Bennett, pp. 605-617.

Soil survey of Scott County, Ky., by R. T. Avon Burke, pp. 619-630.

Soil survey of Mason County, Ky., by R. T. Avon Burke, pp. 631-645.

Soil survey of the Ashtabula area, Ohio, by J. O. Martin and E. P. Carr, pp. 647-658.

Soil survey of the Pontiac area, Michigan, by Henry J. Wilder and W. J. Geib, pp. 659-685.

Soil survey of Madison County, Ind., by R. T. Avon Burke and La Mott Ruhlen, pp. 687-702.

Soil survey of Sangamon County, Ill., by George N. Coffey and party, pp. 703-719.

Soil survey of Johnson County, Ill., by George N. Coffey and party, pp. 721-736.

Soil survey of Knox County, Ill., by George N. Coffey and party, pp. 737-752.

Soil survey of Winnebago County, Ill., by George N. Coffey and party, pp. 753-775.

Soil survey of McLean County, Ill., by George N. Coffey and party, pp. 777-797.

Soil survey of the Viroqua area, Wisconsin, by William G. Smith, pp. 799-814.

Soil survey of the Marshall area, Minnesota, by Henry J. Wilder, pp. 815-831.

Soil survey of Story County, Iowa, by Herbert W. Marean and Grove B. Jones, pp. 833-851.

Soil survey of Cerro Gordo County, Iowa, by Herbert W. Marean and Grove B. Jones, pp. 853-873.

Soil survey of Shelby County, Mo., by R. T. Avon Burke and La Mott Ruhlen, pp. 875-899.

Soil survey of the Parsons area, Kansas, by J. A. Drake, pp. 891-909.

Soil survey of the Russell area, Kansas, by A. W. Mangum and J. A. Drake, pp. 911-926.

Soil survey of the Grand Island area, Nebraska, by W. Edward Hearn and James L. Burgess, pp. 927-945.

Soil survey of the Stanton area, Nebraska, by W. Edward Hearn, pp. 947-962.

Soil survey of the Brookings area, South Dakota, by Frank Bennett, jr., pp. 963-977.

Soil survey of the Fargo area, North Dakota, by Thomas A. Caine, pp. 979-1003.

Soil survey of the Jamestown area, North Dakota, by Thomas A. Caine and A. E. Kocher, pp. 1005-1026.

Soil survey of the Blackfoot area, Idaho, by W. E. McLendon, pp. 1027-1044.

Soil survey of the Solomonsville area, Arizona, by Macy H. Lapham and N. P. Neill, pp. 1045-1070.

Soil survey of the Laramie area, Wyoming, by N. P. Neill and party, pp. 1071-1097.

Soil survey of the San Luis Valley, Colorado, by J. Garnett Holmes, pp. 1099-1119.

Soil survey of the Provo area, Utah, by Alfred M. Sanchez, pp. 1121-1150.

Soil survey of the Baker City area, Oregon, by Charles A. Jensen and W. W. Mackie, pp. 1151-1170.

Soil survey of the Salem area, Oregon, by Charles A. Jensen, pp. 1171-1182.

Soil survey of the San Jose area, California, by Macy H. Lapham, pp. 1183-1217.

Soil survey of the Imperial area, California, by J. Garnett Holmes and party, pp. 1219-1248.

Soil survey of the Indio area, California, by J. Garnett Holmes and party, pp. 1249-1262.

Soil survey of the Los Angeles area, California, by Louis Mesmer, pp. 1263-1306.

Wiel (Samuel C.).

1. A Nevada ore deposit.

Mg. & Sci. Press, vol. 88, pp. 330–331, 1904.

Describes occurrence, character, and geologic relations of a deposit of manganese, and discusses its origin.

Wieland (G. R.).

1. Structure of the upper Cretaceous turtles of New Jersey: Adocus, Osteopygis, and Propleura.

Am. Jour. Sci., 4th ser., vol. 17, pp. 112–132, 9 pls., 7 figs., 1904.

2. Structure of the upper Cretaceous turtles of New Jersey: Lytoloma.

Am. Jour. Sci., 4th ser., vol. 18, pp. 183–196, 4 pls., 6 figs., 1904.

3. The proembryo of the Bennettiteæ.

Am. Jour. Sci., 4th ser., vol. 18, pp. 445–447, 1 pl., 1904.

Wilder (Frank A.).

1. Gypsum deposits in Iowa.

U. S. Geol. Surv., Bull. no. 223, pp. 49–52, 1 pl., 1 fig., 1904.

Discusses character, occurrence, economic development, and geologic relations of the gypsum deposits in this State.

2. The Laramie and Fort Union beds in North Dakota.

Jour. Geol., vol. 12, pp. 290–293, 1904.

Discusses the evidences observed in field work in regard to the relations of the Fort Union beds and the Laramie.

Willcox (O. W.).

1. On certain aspects of the loess of southwestern Iowa.

Jour. Geol., vol. 12, pp. 716–721, 1 fig., 1904.

Describes the character and occurrence of loess deposits in this region differing in color and character, and discusses their origin.

Willey (Day Allen).

1. New Texan oil deposits.

Sci. Am., vol. 90, p. 96, ill., 1904.

Contains notes on the occurrence of petroleum deposits.

Williams (Henry S.).

1. Note on the Devonian fossils [of the Bisbee quadrangle, Arizona].

U. S. Geol. Surv., Professional Paper no. 21, pp. 35–42, 1 pl., 1904.

Gives a list of fossils identified with their occurrence by localities. A few of the more characteristic are figured.

2. Preliminary report on the classification of the rocks of the Watkins Glen (30′) quadrangle (U. S. Geological Survey).

Science, new ser., vol. 19, pp. 234–236, 1904.

Discusses some of the results obtained and the methods, largely paleontologic, used in the stratigraphic work.

Williams (I. A.), **Beyer** (S. W.), and.

1. Technology of clays.

See Beyer (S. W.) and Williams (I. A.), 1.

2. The geology of clays.

See Beyer (S. W.) and Williams (I. A.), 2.

Willis (Bailey).

1. Überschiebungen in den Vereinigten Staaten von Nordamerika.

Congr. géol. intern., Compte rendu IX. Sess., pp. 529–540, 2 figs., 1904.

Defines various kinds of overthrust, and discusses their origin and time relations.

Williston (S. W.).

1. The relationships and habits of the Mosasaurs.

Jour. Geol., vol. 12, pp. 43–51, 1904.

Discusses taxonomy in the vertebrates, and the phylogeny, classification, and mode of life of extinct saurians.

2. Wilbur Clinton Knight.

Am. Geol., vol. 33, pp. 1–6, pl. i (por.) 1904.

Includes a bibliography of the scientific papers published by the subject of the sketch.

3. The fingers of pterodactyls.

Geol. Mag., dec. 5, vol. 1, pp. 59–60, 1904.

4. The stomach stones of the plesiosaurs.

Science, new ser., vol. 20, p. 565, 1904.

5. Notice of some new reptiles from the upper Trias of Wyoming.

Jour. Geol., vol. 12, pp. 688–697, 6 figs., 1904.

Willmott (A. B.).

1. The contact of the Archean and post-Archean in the region of the Great Lakes.

Jour. Geol., vol. 12, pp. 40–42, 1 pl., 1904.

Describes the character of the line of contact of the Archean and overlying formations in the Great Lakes region in Canada and discusses the origin of this character.

2. The exploration of the Ontario iron ranges.

Can. Mg. Rev., vol. 23, pp. 154–156, 1904. Can. Mg. Inst., Jour., vol. 7. Advance separate, 13 pp., 1904.

Describes the general geology of the iron ranges, the character of the rocks, and the occurrence of iron ore deposits.

Wilson (Alfred W. G.).

1. Trent River system and St. Lawrence outlet.

Geol. Soc. Am., Bull., vol. 15, pp. 211–242, 6 pls., 1904.

Describes physiographic features of the country east and northeast of Lake Ontario, and discusses their bearing upon the pre-Glacial drainage of that region.

Wilson (Alfred W. G.)—Continued.

2. Cuspate forelands along the Bay of Quinte [Ontario].

Jour. Geol., vol. 12, pp. 106–132, 12 figs., 1904; McGill Univ., Papers from the Dept. of Geol., no. 18, 1904.

Describes physiographic features in this vicinity, and discusses the mode of their formation by wave action.

Wilson (E. B.).

1. The theory of ore deposits applied to prospecting.

Mines & Minerals, vol. 24, pp. 386–387, 527–529, 4 figs., 1904.

Winchell (Horace V.).

1. Butte [Idaho] copper veins.

Eng. & Mg. Jour., vol. 78, pp. 7–8, 1 fig., 1904.

Describes the general geologic structure and the character and occurrence of the copper-ore deposits.

Winchell (Newton H.).

1. The evolution of climates.

Am. Geol., vol. 33, pp. 116–122, 1904.

States the fundamental ideas involved in the hypothesis of climate in Marsden Manson's "Evolution of Climates" (see no. 838 of U. S. Geol. Surv., Bull. no. 240) and discusses the objections which have been raised against it.

2. Where did life begin?

Am. Geol., vol. 33, pp. 185–189, 1904.

Reviews works by Wm. F. Warren and G. Hilton Scribner and statements of others regarding the origin of life in the north Polar regions and its distribution southward.

3. Peléliths.

Am. Geol., vol. 33, pp. 319–325, 8 figs., 1904.

Applies the term pelélith to massive-solid volcanic extrusions of the type of the recently formed cone of Mont Pelé and describes various examples of peléliths.

4. The colossal bridges of Utah.

Am. Geol., vol. 34, pp. 189–192, 1 fig., 1904.

Describes briefly these arches produced by erosion, situated in San Juan County, Utah.

5. The Baraboo iron ore.

Am. Geol., vol. 34, pp. 242–253, 1904.

Discusses a report by Dr. Weidman on the Baraboo iron-bearing district of Wisconsin.

6. The geology of the iron ores of Minnesota, U. S. A.

Australasia Geol. Soc., Trans., vol. 1, pp. 171–180, 1892.

Discusses the character and occurrence of the iron ores of Minnesota and the age and character of the rocks in which they occur.

7. Notes on the geology of the Hellgate and Big Blackfoot valleys, Montana.

Abstract: Geol. Soc. Am., Bull., vol. 15, pp. 576–578, 1904.

Gives a provisional general section of the rocks of the region and brief notes upon the stratification, geologic structure, and igneous rocks.

Winchell (Newton H.)—Continued.

8. Note on the geology of the Hellgate Valley between Missoula and Elliston, and northward to Placid Lake, in Montana.

Abstract: Science, new ser., vol. 19, pp. 524–525, 1904.

Describes briefly the stratigraphy and general geology of the region.

Wolff (John E.).

1. Cambrian and pre-Cambrian of Hoosac Mountains, Massachusetts.

Abstract: Geol. Soc. Am., Bull., vol. 14, p. 554, 1904.

Wood (Edgar).

1. Eruption of Mauna Loa, 1903.

Am. Geol., vol. 34, pp. 62–64, 1 fig., 1904.

Describes phenomena observed during an eruption of Mauna Loa in October, 1903.

Wood (Elvira).

1. On new and old middle Devonic crinoids.

Smith. Misc. Coll., vol. 47 (Quart. Issue, vol. 2, no. 1), pp. 56–84, 2 pls., 9 figs., 1904.

Wood (H. O.), **Palache** (Charles) and.

1. A crystallographic study of millerite.

See Palache (Charles) and Wood (H. O.), 1.

Woodman (J. Edmund).

1. Nomenclature of the gold-bearing metamorphic series of Nova Scotia.

Am. Geol., vol. 33, pp. 364–370, 1904.

Describes character and occurrence of certain geologic formations in southern Nova Scotia, discusses their nomenclature, and proposes new terms.

2. The sediments of the Meguma series of Nova Scotia.

Am. Geol., vol. 34, pp. 13–34, 1904.

Describes the occurrence and character and the geologic relations and history of the metamorphic formations of southern Nova Scotia.

Woodworth (J. B.).

1. The Brandon clays.

Vt. Geol. Surv., Rept. State Geol., IV, pp. 167–173, 1904.

Describes the fuel value, occurrence, and geologic relations of the lignites in the Brandon clays of Vermont, and discusses fossil fruits occurring in them.

Woolsey (Lester H.).

1. Clays of the Ohio Valley in Pennsylvania.

U. S. Geol. Surv., Bull., no. 225, pp. 463–480, 1904.

Describes occurrence, character, and utilization of the clays of this region.

2. Extra-morainic pebbles in western Pennsylvania.

Abstract: Science, new ser., vol. 19, p. 733, 1904.

Wortman (J. L.).

1. Studies of Eocene mammalia in the Marsh collection, Peabody Museum.

Am. Jour. Sci., 4th ser., vol. 17, pp. 23–33, 133–140, 203–214, 23 figs., 1904.

Wright (Charles W.).

1. The Porcupine placer mining district, Alaska.

U. S. Geol. Surv., Bull. no. 225, pp. 60-63, 1904.

Describes briefly the general geology and the occurrence and mining of placer gold.

2. The Porcupine placer district, Alaska.

U. S. Geol. Surv., Bull. no. 236, 35 pp., 10 pls., 4 figs., 1904.

Describes the general geology, the character and occurrence of placer gold deposits, and the mining operations.

Wright (Fred Eugene).

1. Two microscopic-petrographical methods.

Am. Jour. Sci., 4th ser., vol. 17, pp. 385–391, 6 figs., 1904.

Describes methods of determining index of refraction and optical character of minerals.

2. Der Alkalisyenit von Beverly, Massachusetts, U. S. A.

Tschermak's Min. u. Petrogr. Mitt., N. F., Bd. 19, pp. 308–320, 11 figs., 1900.

Describes crystallographic characters and composition of an alkali-syenite from Beverly, Massachusetts.

Wright (G. Frederick).

1. Evidence of the agency of water in the distribution of the loess in the Missouri Valley.

Am. Geol., vol. 33, pp. 205–222, 3 pls., 1904.

Discusses the distribution of the loess and the evidences of its deposition by the agency of water. Includes a note by Professor Lane on the flow of flooded rivers.

2. Another Glacial wonder.

The Nation, vol. 77, pp. 462–463, 1904.

Describes the occurrence of Glacial boulders in the vicinity of Tuscumbia, Mo., and gives an explanation as to how they came there, and its bearing on the origin of the loess.

Y.

Yates (William).

1. Natural history, meteorological and geological notes from Burford township [Ontario].

Hamilton Sci. Assoc., Jour. & Proc., no. 20, pp. 144–154, 1904.

Includes observations upon glacial phenomena in this region.

Yates (Lorenzo Gordin).

1. Prehistoric California.

So. Cal. Acad. Sci., Bull., vol. 3, pp. 6–10, 1 pl., 1904.

See no. 1365 of U. S. Geol. Surv., Bull. no. 240.

Z.

Zirkel (Ferdinand).

1. Ueber die gegenseitigen Beziehungen zwischen der Petrographie und angrenzenden Wissenschaften.

Jour. Geol., vol. 12, pp. 485–500, 1904.

Discusses the scope and methods of petrography and relations to connected sciences.

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[a] The large number of analyses given in Clarke's "The analyses of rocks from the laboratory of the United States Geological Survey," in Merrill's "The nonmetallic minerals, their occurrence and uses," and in Washington's "Superior analyses of igneous rocks from Roth's Tabellen," have not been included in the list.

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- Cement, Peck, 3.
- Cement, Smith (E. A.), 2.

Economic products described—Continued.
- Cement, Smith and McCalley, 1.
- Chalk, Merrill (G. P.), 1.
- Chromite, Day (D. T.), 1.
- Chromite, Diller, 1.
- Chromite, Keith, 2.
- Chromite, Merrill (G. P.), 1.
- Chromium, Day (D. T.), 2.
- Clay, Beyer and Williams, 1, 2.
- Clay, Bishop, 1.
- Clay, Bleininger, 1.
- Clay, Fuller and Clapp, 1.
- Clay, Hopkins, 1.
- Clay, Keith, 2.
- Clay, Kümmel and Knapp, 1.
- Clay, Lane, 7.
- Clay, Merrill (G. P.), 1.
- Clay, Ries, 3, 4.
- Clay, Sarle, 1.
- Clay, Smith and McCalley, 1.
- Clay, Woolsey, 1.
- Coal, Althouse, 1.
- Coal, Armstrong, 1.
- Coal, Ashley, 1, 2.
- Coal, Bailey (L. W.), 1.
- Coal, Ball and Smith, 1.
- Coal, Blakemore, 1.
- Coal, Burrows, 1.
- Coal, Butts, 1, 2.
- Coal, Campbell, 2–4.
- Coal, Collier and Washburn, 1.
- Coal, Darton, 1.
- Coal, Day (D. T.), 1, 2.
- Coal, Fisher, 1, 2.
- Coal, Fletcher, 1.
- Coal, Fluck, 1.
- Coal, Fowler, 1.
- Coal, Fuller and Clapp, 1.
- Coal, Griffith, 1.
- Coal, Gwillim, 1.
- Coal, Hosea, 1.
- Coal, Jacobs, 1.
- Coal, Keyes, 7.
- Coal, Lakes, 2, 5, 6.
- Coal, McCallie, 2.
- Coal, McEvoy, 1, 2.
- Coal, Martin, 1.
- Coal, Merrill (G. P.), 1.
- Coal, Phillips, 6.
- Coal, Poole, 1, 2.
- Coal, Pultz, 1.
- Coal, Richardson, 1.
- Coal, Robinson, 1.
- Coal, Schrader, 1.
- Coal, Sheridan, 1.
- Coal, Smith (G. O.), 1.
- Coal, Smith and McCalley, 1.
- Coal, Spurr, 4.
- Coal, Stoneham, 1.
- Coal, Sutton, 1.
- Coal, Taff, 1–5.
- Coal, Turnbull, 1.
- Coal, Vicaire, 1.
- Cobalt, Day (D. T.), 1, 2.
- Cobalt, Merrill (G. P.), 1.
- Cobalt, Miller (W. G.), 1.
- Coke, Day (D. T.), 1, 2.

Economic products described—Continued.
Copper, Abercrombie, 1.
Copper, Bagg, 2.
Copper, Barlow, 1.
Copper, Barney, 1.
Copper, Bell (Ralston), 1.
Copper, Bell (R. N.), 1.
Copper, Blake, 3, 7.
Copper, Brewer, 1, 2.
Copper, Byrne, 1.
Copper, Carter (W. E. H.), 1.
Copper, Day (D. T.), 1, 2.
Copper, Diller, 1.
Copper, Dresser, 3.
Copper, Emmons, 2.
Copper, Irving and Emmons, 1.
Copper, Kirby, 1.
Copper, Lakes, 4.
Copper, Lane, 1.
Copper, Lindgren, 2, 3.
Copper, Lunt, 1.
Copper, McCarn, 1.
Copper, Miller (G. W.), 1.
Copper, Musgrave, 1.
Copper, Ransome, 1, 3, 4.
Copper, Read, 2.
Copper, Rickard (F.), 1.
Copper, Rickard (T. A.), 1.
Copper, Smith (D. T.), 1.
Copper, Smyth and Smith, 1.
Copper, Souder, 1.
Copper, Spencer (A. C.), 2.
Copper, Stretch, 2.
Copper, Tippenhauer, 2.
Copper, Vicaire, 1.
Copper, Watson (T. L.), 6.
Copper, Weed, 2-4, 6.
Copper, Wenstrom, 1.
Copper, Winchell (H. V.), 1.
Corundum, Baker, 1.
Corundum, Carter (W. E. H.), 1.
Corundum, Fuller (H. T.), 1.
Corundum, Keith, 2.
Corundum, Merrill (G. P.), 1.
Cryolite, Day (D. T.), 1, 2.
Diatomaceous earth, Merrill (G. P.), 1.
Emery, Fuller (H. T.), 1.
Emery, Merrill (G. P.), 1.
Feldspar, Day (D. T.), 1, 2.
Feldspar, Merrill (G. P.), 1.
Flint, Day (D. T.), 1, 2.
Fluorspar, Bain, 1, 7.
Fluorspar, Day (D. T.), 1, 2
Fuller's earth, Cook, 1.
Fuller's earth, Merrill (G. P.), 1.
Fuller's earth, Vaughan, 1.
Garnet, Keith, 2.
Gilsonite, Merrill (G. P.), 1.
Gold, Abercrombie, 1.
Gold, Atkin, 1.
Gold, Bell (R. N.), 1.
Gold, Blatchford, 1.
Gold, Brewer, 1.
Gold, Brock, 1, 2.
Gold, Brooks, 1.
Gold, Carter (W. E. H.), 1.
Gold, Day (D. T.), 1, 2.

Economic products described—Continued.
Gold, Dern, 1.
Gold, Diller, 1.
Gold, Dominian, 1, 2.
Gold, Draper, 1.
Gold, Hill (R. T.), 1, 2.
Gold, Irving, 1, 2.
Gold, Irving and Emmons, 1.
Gold, Kirby, 1.
Gold, Lakes, 8.
Gold, Lane, 8.
Gold, Lindgren, 2.
Gold, Lindgren and Drake, 1, 2.
Gold, Lindgren and Ransome, 1.
Gold, Mallery, 1.
Gold, Moffit, 1.
Gold, O'Harra, 1.
Gold, Palache, 1.
Gold, Prindle, 1.
Gold, Ransome, 3.
Gold, Schrader, 1.
Gold, Smith (D. T.), 1.
Gold, Smith (G. O.), 1.
Gold, Smith and McCalley, 1.
Gold, Spencer (A. C.), 1, 3.
Gold, Spurr, 2, 3, 6.
Gold, Storms, 2.
Gold, Sutton, 1.
Gold, Turner, 3.
Gold, Vicaire, 1.
Gold, Washburne, 1, 2.
Gold, Weed, 5.
Gold, Wright (G. W.), 1, 2.
Graphite, Carter (W. E. H.), 1.
Graphite, Day (D. T.), 1, 2.
Graphite, Kemp, 2.
Graphite, Merrill (G. P.), 1.
Gravel, Sarle, 1.
Guano, Merrill (G. P.), 1.
Gypsum, Adams (G. I.), 1.
Gypsum, Bell (J. M.), 1.
Gypsum, Blake, 1.
Gypsum, Boutwell, 1, 4.
Gypsum, Darton, 1, 2.
Gypsum, Day (D. T.), 1, 2, 3.
Gypsum, Diehl, 1.
Gypsum, Eckel, 1, 2.
Gypsum, Fairbanks, 1.
Gypsum, Gould, 2, 3.
Gypsum, Gregory, 1.
Gypsum, Grimsley, 1-4.
Gypsum, Herrick (C. L.), 4.
Gypsum, Herrick (H. N.), 1.
Gypsum, Hill (B. F.), 1.
Gypsum, Knight (W. C.), 1.
Gypsum, Lakes, 1.
Gypsum, Lindgren, 1.
Gypsum, Louderback, 2.
Gypsum, Merrill (G. P.), 1.
Gypsum, Parsons, 1.
Gypsum, Peppel, 1.
Gypsum, Sarle, 1.
Gypsum, Weed, 1.
Gypsum, Wilder, 1.
Iron, Ball and Smith, 1.
Iron, Bayley, 1.
Iron, Bell (J. M.), 1.

Economic products described—Continued.
Iron, Boutwell, 3.
Iron, Brewer, 1.
Iron, Capilla, 1.
Iron, Carlyle, 1.
Iron, Carter (W. E. H.), 1.
Iron, Coleman, 3.
Iron, Culbert, 1.
Iron, Day (D. T.), 1, 2.
Iron, Diller, 1.
Iron, Eckel, 9.
Iron, Fairbanks, 2.
Iron, Farrington, 2.
Iron, Garrison, 1, 2.
Iron, Grant (U. S.), 1.
Iron, Hille, 1, 2.
Iron, Jennings, 2.
Iron, Keyes, 6.
Iron, Leith, 2-4.
Iron, Macco, 1.
Iron, Maxwell, 1.
Iron, Ries, 2.
Iron, Rose, 1.
Iron, Smith and McCalley, 1.
Iron, Souder, 1.
Iron, Spencer (A. C.), 4.
Iron, Thomas, 1, 2.
Iron, Tippenhauer, 2.
Iron, Van Hise, 5.
Iron, Warwick, 1.
Iron, Weidman, 3, 4.
Iron, Willmott, 2.
Iron, Winchell (N. H.), 5, 6.
Kaolin, Smith and McCalley, 1.
Lead, Adams (G. I.), 2.
Lead, Bain, 6.
Lead, Ball and Smith, 1.
Lead, Bell (R. N.), 1, 2.
Lead, Boutwell, 2.
Lead, Cahill, 1.
Lead, Carter (W. E. H.), 1.
Lead, Crook, 1.
Lead, Day (D. T.), 1, 2.
Lead, Finlay, 1.
Lead, Lindgren, 2.
Lead, Phillips (W. B.), 3.
Lead, Silver, 1.
Lead, Wheeler, 1.
Lignite, Bell (J. M.), 1.
Lignite, Burchard, 1, 2.
Lignite. Merrill (G. P.), 1.
Lignite, Phillips, 6.
Lignite, Tippenhauer, 2.
Lignite, Woodworth, 1.
Lime, Blatchley, 2.
Lime, Keith, 2.
Limestone, Merrill (G. P.), 1.
Limestone, Orton and Peppel, 1.
Limestone, Stose, 1.
Lithium, Day (D. T.), 1, 2.
Magnesite, Day (D. T.), 1, 2.
Magnesite, Spinks, 1.
Manganese, Day (D. T.), 1, 2.
Manganese, Jennison, 1.
Manganese, Merrill (G. P.), 1.
Manganese, Souder, 1.
Manganese, Wiel, 1.

Economic products described—Continued.
Marble, Keith, 2.
Marble, Smith and McCalley, 1.
Mercury, Villarello, 5.
Mica, Carter (W. E. H.), 1.
Mica, Cirkel, 1.
Mica, Corkill, 1.
Mica, Day (D. T.), 1.
Mica, Merrill (G. P.), 1.
Mica, Smith and McCalley, 1.
Mineral water, Babcock and Minor, 1.
Mineral waters, Day (D. T.), 1, 2.
Mineral waters, Merrill (G. P.), 1.
Mineral waters, Peter, 1.
Molybdenite, Crook, 2.
Molybdenum, Day (D. T.), 1.
Monazite, Day (D. T.), 1, 2.
Natural gas, Adams, Haworth, and Crane, 1.
Natural gas, Bell (Robert), 2.
Natural gas, Bishop, 1.
Natural gas, Blatchley, 1.
Natural gas, Butts, 2.
Natural gas, Coste, 1.
Natural gas, Day (D. T.), 1, 2.
Natural gas, Fuller (M. L.), 2.
Natural gas, Kinney, 1.
Natural gas, Lane, 4.
Natural gas, Merrill (G. P.), 1.
Natural gas, Mickle, 1.
Natural gas, Oliphant, 1.
Natural gas, Richardson, 1.
Natural gas, Stone, 2.
Natural gas, White (I. C.), 2, 3.
Nickel, Barlow, 1.
Nickel, Carter (W. E. H.), 1.
Nickel, Coleman, 3, 4.
Nickel, Day (D. T.), 1, 2.
Nickel, Keith, 2.
Nickel, Miller (W. G.), 1.
Nitre, Merrill (G. P.), 1.
Ocher, Merrill (G. P.), 1.
Oil, Hager, 1.
Ozokerite, Merrill (G. P.), 1.
Peat, Chalmers, 2.
Peat, Merrill (G. P.), 1.
Peat, Sarle, 1.
Petroleum, Adams, Haworth, and Crane, 1.
Petroleum, Alcala, 1.
Petroleum, Bell (Robert), 2.
Petroleum, Bishop, 1.
Petroleum, Blatchley, 1.
Petroleum, Butts, 2.
Petroleum, Coste, 1-3.
Petroleum, Darton, 1.
Petroleum, Day (D. T.), 1, 2.
Petroleum, Fenneman, 1.
Petroleum, Lane, 4.
Petroleum, Martin, 1.
Petroleum, Merrill (G. P.), 1.
Petroleum, Mickle, 1.
Petroleum, Oliphant, 2.
Petroleum, Otsuka, 1.
Petroleum, Prutzman, 1.
Petroleum, Stone, 2.
Petroleum, Villarello, 2.
Petroleum, White (I. C.), 2.
Petroleum, Willey, 1.

Economic products described—Continued.
Phosphate, Chazal, 1.
Phosphate, Day (D. T.), 1, 2.
Phosphate, Merrill (G. P.), 1.
Phosphate, Smith and McCalley, 1.
Platinum, Brock, 3.
Platinum, Day (D. T.), 1, 2.
Platinum, Kemp, 5.
Portland cement, Catlett, 1.
Portland cement, Eckel, 4.
Portland cement, Merrill (G. P.), 1.
Portland cement, Smith (E. A.), 1.
Precious stones, Day (D. T.), 1, 2.
Pumice, Merrill (G. P.), 1.
Pyrite, Day (D. T.), 1, 2.
Pyrite, Merrill (G. P.), 1.
Pyrite, Smith and McCalley, 1.
Quicksilver, Day (D. T.), 1, 2.
Quicksilver, Demaret, 2.
Quicksilver, Forstner, 2.
Quicksilver, Kirk and Malcolmson, 1.
Quicksilver, Monckton, 1.
Quicksilver, Osmont, 1.
Quicksilver, Phillips (W. B.), 2, 4, 5.
Quicksilver, Wendeborn, 2.
Retinite, Merrill (G. P.), 1.
Rutile, Merrill (G. P.), 1.
Salt, Bishop, 1.
Salt, Day (D. T.), 1, 2.
Salt, Eckel, 5.
Salt, Hager, 1.
Salt, Herrick (C. L.), 4.
Salt, Merrill, (G. P.), 1.
Salt, Richardson, 2.
Sand, Sarle, 1.
Sand, glass, Day (D. T.), 1, 2.
Sandstone, Richardson, 1.
Silver, Bell (R. N.), 1.
Silver, Boutwell, 2.
Silver, Byrne, 1.
Silver, Cahill, 1.
Silver, Carter (W. E. H.), 1.
Silver, Day (D. T.), 1, 2.
Silver, Dern, 1.
Silver, Diller, 1.
Silver, Dominian, 1.
Silver, Emmons, 2.
Silver, Farrington, 2.
Silver, Findlay (J. R.), 1.
Silver, Halse, 1.
Silver, Henrich, 1.
Silver, Hill (R. T.), 1.
Silver, Irving, 1, 2.
Silver, Irving and Emmons, 1.
Silver, Kirby, 1.
Silver, Lakes, 8, 12.
Silver, Lindgren, 2.
Silver, Lindgren and Drake, 2.
Silver, Miller (G. W.), 1.
Silver, Miller (W. G.), 1.
Silver, Ordoñez, 1.
Silver, Ransome, 3.
Silver, Spencer (A. C.), 2.
Silver, Spurr, 2.
Silver, Stretch, 1.
Silver, Udden, 1.
Silver, Vicaire, 1.
Economic products described—Continued.
Slate, Dale, 2.
Slate, Eckel, 3, 6, 7.
Soapstone, Day (D. T.), 1, 2.
Soapstone, Keith, 2.
Soils, Darton and Smith, 1.
Soils, Fairbanks, 2.
Soils, Fuller and Clapp, 1.
Soils, Smith and McCalley, 1.
Soils, Weidman, 2.
Soils, Whitney, 1.
Sulphur, Adams (G. I.), 4.
Sulphur, Day, (D. T.), 1, 2.
Sulphur, Merrill (G. P.), 1.
Sulphur, Richardson, 2.
Talc, Day (D. T.), 1, 2.
Talc, Keith, 2.
Talc, Merrill (G. P.), 1.
Tar, Day (D. T.), 1, 2.
Tin, Collier, 1.
Tin, Day (D. T.), 2.
Tin, Garrison, 3.
Tin, Irving, 1.
Tin, Irving and Emmons, 1.
Tin, Sterrett and Pratt, 1.
Tin, Struthers and Pratt, 1.
Tripoli, Merrill (G. P.), 1.
Tungsten, Day (D. T.), 1.
Tungsten, Irving and Emmons, 1.
Tungsten, Merrill (G. P.), 1.
Tungsten, Rickard (F.), 2.
Tungsten, Simmons, 1.
Uranium, Day (D. T.), 1.
Vanadium, Caballero, 1.
Vanadium, Day (D. T.), 1.
Water, Bascom, 1.
Water, Bayley, 2.
Water, Boutwell, 5.
Water, Cooper, 1.
Water, Crosby, 4.
Water, Crosby and La Forge, 1.
Water, Fuller (M. L.), 3–7.
Water, Glenn, 4.
Water, Gregory, 1.
Water, Hall (C. W.), 1.
Water, Harris, 1.
Water, Johnson and Eckel, 1.
Water, Lee, 1.
Water, McCallie, 1.
Water, Perkins, 1.
Water, Peter, 1.
Water, Purdue, 1.
Water, Richardson, 2.
Water, Shepard, 2.
Water, Smith (E. A.), 3.
Water, Todd, 4.
Water, Weeks, 2.
Water power, Flynn and Flynn, 1.
Water power, Hall (B. M.), 1.
Water supply, Darton and Smith, 1.
Water supply, Ordoñez, 2.
Water supply, Todd and Hall, 1.
Water supply, Weidman, 2.
Whetstones, Merrill (G. P.), 1.
Wolframite, Irving, 1, 2.
Wolframite, Irving and Emmons, 1.
Zinc, Adams (G. I.), 2.

Economic products described—Continued.
Zinc, Bain, 6, 8.
Zinc, Ball and Smith, 1.
Zinc, Carter (W. E. H.), 1.
Zinc, Crook, 1.
Zinc, Day (D. T.), 1, 2.
Zinc, Demaret, 1.
Zinc, Keith, 1.
Zircon, Day (D. T.), 2.
Florida.
Fuller's earth of Georgia and Florida, Vaughan, 1.
Gypsum deposits in Florida, Day (D. T.), 3.
Union of Cuba with Florida, Spencer (J. W.), 1.
Water resources of Florida, Fuller (M. L.), 7.
Geologic formations described.
Alabama white limestone, Tertiary, Alabama, Casey, 2.
Albert shales, Carboniferous, Canada, Bailey (L. W.), 1.
Albertan, Pleistocene, Iowa, Beyer and Williams, 2.
Allegheny formation, Carboniferous, Pennsylvania, Butts, 2.
Allegheny formation, Carboniferous, Pennsylvania, Campbell, 4.
Allegheny formation, Carboniferous, Pennsylvania, Richardson, 1.
Allen limestone, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
Alloway clay, Tertiary, New Jersey, Kümmel and Knapp, 1.
Altamont (Parsons) limestone, Carboniferous, Kansas, Beede and Rogers, 1.
Alta beds, Carboniferous, Texas, Udden, 1.
Altona dolomite, Permian, Oklahoma, Gould, 1.
Amboy stoneware clay, Cretaceous, New Jersey, Kümmel and Knapp, 1.
Americus limestone, Carboniferous, Kansas, Smith (A. J.), 1.
Ames limestone, Carboniferous, Ohio, Orton and Peppel, 1.
Ames limestone, Carboniferous, Pennsylvania, Butts, 2.
Amsden formation, Carboniferous, Wyoming, Darton, 3.
Anaktuvuk series, Cretaceous, Alaska, Schrader, 1.
Apache group, Cambrian (?), Arizona, Ransome, 3.
Arapahoe formation, Tertiary, Colorado, Darton, 3.
Arbuckle limestone, Cambro-Ordovician, Indian Territory and Oklahoma, Taff, 7.
Arbuckle limestone, Cambro-Ordovician, Oklahoma, Gould, 5.
Asbury clay, Tertiary, New Jersey, Kümmel and Knapp, 1.
Atascedero formation, Cretaceous, California, Fairbanks, 2.
Athens shale, Ordovician, Tennessee, Keith, 2.
Aubrey formation, Utah, Huntington and Goldthwait, 1.
Abrigo limestone, Cambrian, Arizona, Ransome, 1, 4.

Geologic formations described—Continued.
Baltimore gneiss, Algonkian, Pennsylvania, Bascom, 1.
Bandera shale, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
Bandera shales, Carboniferous, Kansas, Beede and Rogers, 1.
Bangor limestone, Carboniferous, Georgia, McCallie, 2.
Baraboo quartzite, Pre-Cambrian, Wisconsin, Weidman, 3.
Barnes conglomerate, Cambrian (?), Arizona, Ransome, 3.
Basal conglomerate, Pennsylvania, Peck, 1.
Batesville sandstone, Carboniferous, Arkansas, Adams (G. I.), 2.
Batesville sandstone, Carboniferous, Arkansas, Ulrich, 2.
Beacon Hill formation, Tertiary, New Jersey, Kümmel and Knapp, 1.
Bedford oolitic limestone, Mississippian, Indiana, Hopkins, 3.
Beekmantown, Ordovician, Vermont, Perkins, 4.
Beekmantown shale, Ordovician, New York, Dale, 3.
Benton formation, Cretaceous, South Dakota, Todd, 2, 4.
Benton formation, Cretaceous, South Dakota, Todd and Hall, 1, 2.
Benton group, Cretaceous, Black Hills region, Wyoming and Colorado, Darton, 3.
Benton shale, Cretaceous, Black Hills region, Jaggar, 1.
Benton group, Cretaceous, Nebraska, Burchard, 2.
Benwood limestone, Carboniferous, Pennsylvania, Stone, 2.
Bertie water lime, Silurian, New York, Clarke and Luther, 1.
Bergman series, Cretaceous?, Alaska, Schrader, 1.
Bighorn limestone, Ordovician, Wyoming, Darton, 3.
Bisbee group, Cretaceous, Arizona, Ransome, 1, 4.
Black River, Ordovician, Vermont, Perkins, 4.
Blaine division, Permian, Oklahoma, Gould, 1.
Bliss sandstone, Cambrian, Texas, Richardson, 2.
Bolin Creek sandstone member of Elizabeth formation, Ordovician, Missouri, Ball and Smith, 1.
Bolsa quartzite, Cambrian, Arizona, Ransome, 1, 4.
Boone formation, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
Boone formation, Carboniferous, Missouri, Bain, 8.
Boone limestone, Carboniferous, Arkansas, Ulrich, 2.
Boone limestone and chert, Carboniferous, Arkansas, Adams (G. I.), 2.
Bradfordian, Carboniferous, Pennsylvania, Girty, 6.

Geologic formations described—Continued.
- Bragdon formation, Jurassic, California, Hershey, 1.
- Brandon clays, Tertiary, Vermont, Woodworth, 1.
- Brentwood (Pentremital) limestone, Carboniferous, Arkansas, Ulrich, 2.
- Bridgeton formation, Pleistocene, New Jersey, Kümmel and Knapp, 1.
- Brier slate, Algonkian, Michigan, Bayley, 1.
- Bronson formation, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
- Brunswick series, included in Newark, New Jersey, Knapp, 1.
- Buda limestone (?), Cretaceous, Texas, Udden, 1.
- Buena Vista member, Carboniferous, Ohio, Prosser and Cumings, 1.
- Burgoon (Mountain) limestone, Carboniferous, Pennsylvania, Butts, 2.
- Burlingame limestone, Carboniferous, Smith (A. J.), 1.
- Burlington limestone, Carboniferous, Missouri, Ball, 1.
- Burlington (upper) limestone, Carboniferous, Missouri, Ball and Smith, 1.
- Butler sandstone, Carboniferous, Pennsylvania, Butts, 2.
- Byram beds, Tertiary, Mississippi, Casey, 2.
- Cache Creek series, pre-Cretaceous, Washington, Smith and Calkins, 1.
- Caliche Mountain rhyolite, Mexico, Hill (R. T.), 2.
- Calvert formation, Miocene, Maryland, Clark, 2.
- Calvert formation, Miocene, Maryland, Shattuck, 2.
- Cambridge limestone, Carboniferous, Ohio, Orton and Peppel, 1.
- Camillus shale, Silurian, New York, Clarke and Luther, 1.
- Campagrande formation, Cretaceous, Texas, Richardson, 2.
- Canandaigua shale, Devonian, New York, Clarke and Luther, 1.
- Caney shale, Carboniferous, Indian Territory, Taff, 7.
- Cape May formation, Pleistocene, New Jersey, Kümmel and Knapp, 1.
- Capitan limestone, Permian, Texas, Richardson, 2.
- Capote limestone, Arizona, Blake, 6.
- Cardiff shale, Devonian, New York, Clarke and Luther, 1.
- Cariboo schists, lower Paleozoic, Canada, Atkin, 1.
- Carlile formation, Cretaceous, Black Hills region and Colorado, Darton, 3.
- Carlile formation, Cretaceous, South Dakota, Darton and Smith, 1.
- Carlile formation, Cretaceous, Wyoming, Darton, 1.
- Carlile shales, Cretaceous, South Dakota, Todd, 2.
- Carmichaels formation, Quaternary, Pennsylvania, Butts, 2.
- Carmichaels formation, Quaternary, Pennsylvania, Campbell, 4.
- Carolina gneiss, Archean, North Carolina, Keith, 2.
- Cashaqua shale, Devonian, New York, Clarke and Luther, 1.
- Cason shale, Silurian, Arkansas, Ulrich, 2.
- Castile gypsum, Permian, Texas, Richardson, 2.
- Cedartop gypsum, Permian, Oklahoma, Gould, 1.
- Centerfield limestone, Devonian, New York, Clarke and Luther, 1.
- Chadron formation, Tertiary, South Dakota, Darton and Smith, 1.
- Chandler formation, Carboniferous, Oklahoma, Kirk, 1.
- Chanute shale, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
- Chazy, Ordovician, Vermont, Perkins, 4.
- Chemung formation, Devonian, Pennsylvania, Campbell, 4.
- Cherokee shale, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
- Cherokee shales, Carboniferous, Kansas, Beede and Rogers, 1.
- Cherry Creek formation, Algonkian?, Montana, Douglass, 2.
- Cherryvale shale, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
- Chesapeake group, Miocene, Maryland, Clark, 2.
- Chesapeake group, Miocene, Maryland, Shattuck, 2.
- Chester Valley limestone, Cambro-Ordovician, Pennsylvania, Bascom, 1.
- Chickies quartzite, Cambrian, Pennsylvania, Bascom, 1.
- Chinati series, Permian (?) and Carboniferous, Texas, Udden, 1.
- Choptank formation, Miocene, Maryland, Clark, 2.
- Choptank formation, Miocene, Maryland, Shattuck, 2.
- Chouteau limestone, Carboniferous, Missouri, Ball, 1.
- Chouteau, Carboniferous, Missouri, Ball and Smith, 1.
- Chugwater formation, Triassic (?) and Permian (?), Colorado and Wyoming, Darton, 3.
- Chugwater formation, Triassic (?) or Permian, Wyoming, Darton, 3.
- Cibolo beds, Carboniferous, Texas, Udden, 1.
- Cieneguita beds, Carboniferous, Texas, Udden, 1.
- Cincinnatian series, Ordovician, Indiana, Foerste, 3.
- Cintura limestone, Cretaceous, Arizona, Ransome, 1, 4.
- Clarion sandstone, Carboniferous, Pennsylvania, Butts, 2.
- Clear Creek volcanic series, Trias, California, Hershey, 1.
- Cliffwood clays, Cretaceous, New Jersey, Knapp, 2.

Geologic formations described—Continued.

Cliffwood lignitic sands and clays, Cretaceous, New Jersey, Kümmel and Knapp, 1.
Clinton limestone, Silurian, Indiana, Foerste, 3.
Cloverly formation, Cretaceous, Wyoming, Darton, 3.
Coal Measure formations, Carboniferous, Missouri, Ball and Smith, 1.
Coal Measures, Carboniferous, Indiana, Hopkins 3.
Cobleskill shale and dolomite, Silurian, New York, Clarke and Luther, 1.
Cochran conglomerate, Cambrian, North Carolina and Tennessee, Keith, 2.
Cohansey formation, Tertiary, New Jersey, Knapp, 1.
Cohansey formation, Tertiary, New Jersey, Kümmel and Knapp, 1.
Collingsworth gypsum, Permian, Oklahoma, Gould, 1.
Colob formation, Utah, Huntington and Goldthwait, 1.
Colorado group, Cretaceous, South Dakota, Todd, 4.
Colorado group, Cretaceous, South Dakota, Todd and Hall, 2.
Columbia formation, Pleistocene, Atlantic coast region, Clark, 2.
Columbus sand, Cretaceous, New Jersey, Kümmel and Knapp, 1.
Colville series, Tertiary, Alaska, Schrader, 1.
Comanche series, Cretaceous, Colorado, Darton, 3.
Comanche series, Cretaceous, Texas, Richardson, 2.
Concreto shale, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
Conemaugh formation, Carboniferous, Pennsylvania, Butts, 2.
Conemaugh formation, Carboniferous, Pennsylvania, Campbell, 4.
Conemaugh formation, Carboniferous, Pennsylvania, Richardson, 1.
Connellsville sandstone, Carboniferous, Pennsylvania, Richardson, 1.
Connellsville sandstone member of the Conemaugh formation, Carboniferous, Pennsylvania, Campbell, 4.
Connoquenessing sandstone, Carboniferous, Pennsylvania, Butts, 2.
Corwin series, Jura-Cretaceous, Alaska, Schrader, 1.
Cottonwood formation, Carboniferous, Kansas, Smith (A. J.), 1.
Cottonwood limestone, Carboniferous, Kansas, Prosser and Beede, 1.
Cox formation, Cretaceous, Texas, Richardson, 2.
Cranberry granite, Archean, North Carolina, Keith, 2.
Crystal City sandstone, Ordovician, Missouri, Ulrich, 2.
Cuesta diabase, California, Fairbanks, 2.
Curry member of Vulcan formation, Algonkian, Michigan, Bayley, 1.

Geologic formations described—Continued.

Cuyahoga formation, Carboniferous, Ohio, Prosser and Cumings, 1.
Dakota, Cretaceous, Nebraska, Burchard, 2.
Dakota formation, Cretaceous, South Dakota, Todd, 4.
Dakota formation, Cretaceous, South Dakota, Todd and Hall, 1, 2.
Dakota sandstone, Cretaceous, Black Hills region, Jaggar, 1.
Dakota sandstone, Cretaceous, Black Hills region, Wyoming and Colorado, Darton, 3.
Dakota sandstone, Cretaceous, South Dakota, Darton and Smith, 1.
Day Creek dolomite, Permian, Oklahoma, Gould, 1.
Deadwood formation, Cambrian, Black Hills region, Jaggar, 1.
Deadwood formation, Cambrian, Black Hills region and Wyoming, Darton, 3.
Deep River beds, Miocene, Montana, Douglass, 1.
Delaware Mountain formation, Permian, Texas, Richardson, 2.
Delphi dolomite, Permian, Oklahoma, Gould, 1.
Del Rio clay (?), Cretaceous, Texas, Udden, 1.
Dennis limestone, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
Denver formation, Tertiary, Colorado, Darton, 3.
Ditney formation, Carboniferous, Indiana, Fuller and Clapp, 1.
Dog Creek shales, Permian, Oklahoma, Gould, 1.
Doyle shale, Carboniferous, Kansas, Prosser and Beede, 1.
Dripping Spring quartzite, Cambrian (?), Arizona, Ransome, 3.
Drum limestone, Carboniferous, Kansas, Adams. Haworth, and Crane, 1.
Dudley shale, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
Dudley shales, Carboniferous, Kansas, Beede and Rogers, 1.
Dunkard formation, Carboniferous, Pennsylvania, Campbell, 4.
Dunkard formation, Carboniferous, Pennsylvania, Stone, 2.
Durazno formation, Mexico, Hill (R. T.), 2.
Easton schist, pre-Tertiary, Washington, Smith (G. O.), 1.
Edmonton series, Cretaceous, Canada, Lambe, 1.
Edwards limestone, Cretaceous, Texas, Udden, 1.
Elbert formation, Devonian, Colorado, Cross (W.), 1.
Ellensburg formation, Tertiary, Washington, Smith (G. O.), 1.
Elmdale formation, Carboniferous, Kansas, Prosser and Beede, 1.
El Paso formation, Ordovician, Texas, Richardson, 2.
Emporia system, Carboniferous, Kansas, Smith (A. J.), 1.

Geologic formations described—Continued.
Englewood limestone, Carboniferous (Mississippian), Black Hills region, Darton, 3.
Englewood limestone, Carboniferous (Mississippian), Black Hills region, Jaggar, 1.
Escabrosa limestone, Carboniferous, Arizona, Ransome, 1, 4.
Escamela limestone, Cretaceous, Mexico, Hall (C. E.), 1.
Eskridge shale, Carboniferous, Kansas, Prosser and Beede, 1.
Eureka shales, Mississippian, Missouri, Gould, 4.
Fairhaven diatomaceous earth, Miocene, Maryland, Shattuck, 2.
Fayetteville shale, Carboniferous, Arkansas, Adams (G. I.), 2.
Fayetteville shale, Carboniferous, Arkansas, Ulrich, 2.
Ferguson gypsum, Permian, Oklahoma, Gould, 1.
Fickett series, Carboniferous, Alaska, Schrader, 1.
Finlay formation, Cretaceous, Texas, Richardson, 2.
Fish-House clays, Pleistocene, New Jersey, Kümmel and Knapp, 1.
Florena shale, Carboniferous, Kansas, Prosser and Beede, 1.
Florence flint, Carboniferous, Kansas, Prosser and Beede, 1.
Floyd shale, Carboniferous, Georgia, McCallie, 2.
Fort Payne chert, Carboniferous, Georgia, McCallie, 2.
Fort Riley limestone, Carboniferous, Kansas, Prosser and Beede, 1.
Fort Scott limestone, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
Fort Scott limestone, Carboniferous, Kansas, Beede and Rogers, 1.
Fort Union beds, North Dakota, Wilder, 2.
Fountain formation, Carboniferous (Pennsylvanian), Colorado, Darton, 3.
Fox Hills formation, Cretaceous, Black Hills region and Wyoming, Darton, 3.
Fox Hills formation, Cretaceous, Wyoming, Darton, 1.
Franciscan series, California, Osmont, 1.
Franks conglomerate, Carboniferous, Indian Territory, Taff, 7.
Fredericksburg group, Cretaceous, Texas, Richardson, 2.
Freedom formation, pre-Cambrian, Wisconsin, Weidman, 3.
Freeport limestone, Carboniferous, Pennsylvania, Butts, 2.
Freeport sandstone, Carboniferous, Pennsylvania, Butts, 2.
Fremont limestone, Ordovician, Colorado, Darton, 3.
Fuson formation, Cretaceous, Black Hills region, Darton, 3.
Fuson formation, Cretaceous, South Dakota, Darton and Smith, 1.
Fuson formation, Cretaceous, Wyoming, South Dakota, Darton, 1.
Galena-Trenton, Iowa, Beyer and Williams, 2.
Galesburg shale, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
Garrison formation, Carboniferous, Kansas, Prosser and Beede, 1.
Gasconade limestone, Cambro-Ordovician, Missouri, Ball, 1.
Gasconade limestone, Ordovician, Missouri, Ball and Smith, 1.
Genesee shale, Devonian, New York, Clarke and Luther, 1.
Genundewa limestone, Devonian, New York, Clarke and Luther, 1.
Gering sandstones, Tertiary, Nebraska, Peterson, 1.
Gila conglomerate, Quaternary, Arizona, Ransome, 3.
Glance conglomerate, Cretaceous, Arizona, Ransome, 1, 4.
Globe limestone, Devonian and Carboniferous, Arizona, Ransome, 3.
Golden Bar andesite, Mexico, Hill (R. T.), 2.
Goldenville formation, Nova Scotia, Woodman, 1, 2.
Grand Rapids group, Carboniferous, Michigan, Gregory, 1.
Graneros formation, Cretaceous, Wyoming, South Dakota, Darton, 1.
Graneros shale, Cretaceous, Black Hills region and Colorado, Darton, 3.
Graneros shale, Cretaceous, South Dakota, Darton and Smith, 1.
Graneros shales, Cretaceous, South Dakota, Todd, 2.
Graydon sandstone, Carboniferous, Missouri, Ball, 1.
Graydon sandstone, Carboniferous, Missouri, Ball and Smith, 1.
Graydon sandstone, Missouri, Babcock and Minor, 1.
Great Smoky conglomerate, Cambrian, North Carolina and Tennessee, Keith, 2.
Greenhorn limestone, Cretaceous, Black Hills region and Colorado, Darton, 3.
Greenhorn limestone, Cretaceous, Nebraska, Burchard, 2.
Greenhorn limestone, Cretaceous, South Dakota, Darton and Smith, 1.
Greenhorn limestone, Cretaceous, South Dakota, Todd, 2.
Greenhorn limestone, Cretaceous, Wyoming, Darton, 1.
Greer division, Permian, Oklahoma, Gould, 1.
Grimes sandstone, Devonian, New York, Clarke and Luther, 1.
Ground-ice formation, Quaternary, Alaska, Schrader, 1.
Gubik sand, Quaternary, Alaska, Schrader, 1.
Guernsey formation, Carboniferous (Mississippian), Wyoming, Darton, 3.
Gunter sandstone, Cambro-Ordovician, Missouri, Ball, 1.
Gunter sandstone, Ordovician, Missouri, Ball and Smith, 1.
Gwynedd shales, Pennsylvania, Lyman, 2.

Geologic formations described—Continued.

Halifax formation, Nova Scotia, Woodman, 1, 2.
Hanbury slate, Algonkian, Michigan, Bayley, 1.
Harding sandstone, Ordovician, Colorado, Darton, 3.
Harrison beds, Tertiary, Nebraska, Peterson, 1.
Harrodsburg limestone, Mississippian, Indiana, Hopkins, 3.
Hartville formation, Carboniferous, Wyoming, Darton, 3.
Hatch shale and flags, Devonian, New York, Clarke and Luther, 1.
Hawkins formation, pre-Tertiary, Washington, Smith (G. O.), 1.
Haystack gypsum, Permian, Oklahoma, Gould, 1.
Hermansville limestone, Ordovician, Michigan, Bayley, 1.
Hertha limestone, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
Hesse quartzite, Cambrian, North Carolina and Tennessee, Keith, 2.
Highpoint sandstone, Devonian, New York, Clarke and Luther, 1.
Hiwassee slate, Cambrian, North Carolina and Tennessee, Keith, 2.
Homewood sandstone, Carboniferous, Pennsylvania, Butts, 2.
Honaker limestone, Cambrian, Tennessee, Keith, 2.
Hudson shale and Hudson schist, Ordovician, New York, Dale, 3.
Hueco formation, Carboniferous, Texas, Richardson, 2.
Huntington limestone, Silurian, Indiana, Kindle, 3.
Hunton limestone, Siluro-Devonian, Indian Territory, Taff, 7.
Huron group, Mississippian, Indiana, Hopkins, 3.
Huronian, Canada, Barlow, 1.
Idaho formation, Tertiary, Idaho, Lindgren and Drake, 2.
Ignacio quartzite, Cambrian, Colorado, Cross, (W.), 1.
Illinoian, Pleistocene, Iowa, Beyer and Williams, 2.
Illinoian drift, Quaternary, Indiana and Illinois, Fuller and Clapp, 1.
Incarnacion clays, Carboniferous, New Mexico, Herrick (C. L.), 1.
Independence shales, Devonian, Iowa, Beyer and Williams, 2.
Inglefield formation, Carboniferous, Indiana, Fuller and Clapp, 1.
Iola limestone, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
Iowan, Pleistocene, Iowa, Beyer and Williams, 2.
Iowan deposits, Quaternary, Indiana and Illinois, Fuller and Clapp, 1.
Irving formation, Colorado, Howe, 1.
Izard limestone, Ordovician, Arkansas, Adams (G. I.), 2.
Izard limestone, Ordovician, Arkansas, Ulrich, 2.
Jackson stage, Tertiary, Louisiana, Casey, 2.
Jefferson City formation, Cambro-Ordovician, Missouri, Ball, 1.
Jeffersonville limestone, Devonian, Indiana, Hopkins, 3.
Jefferson City formation, Ordovician, Missouri, Ball and Smith, 1.
Kanab, Utah, Huntington and Goldthwait, 1.
Kansan, Pleistocene, Iowa, Beyer and Williams, 2.
Kansan gravel, Quaternary, Pennsylvania, Leverett, 4.
Kessler limestone, Carboniferous, Arkansas, Ulrich, 2.
Key sandstone, Ordovician, Arkansas, Adams (G. I.), 2.
Key sandstone, Ordovician, Arkansas, Ulrich, 2.
Kirkwood formation, Miocene, New Jersey, Clapp, 1.
Kiser gypsum, Permian, Oklahoma, Gould, 1.
Kittanning limestone, Carboniferous, Ohio, Orton and Peppel, 1.
Kittanning sandstone, Carboniferous, Pennsylvania, Butts, 2.
Knobstone group, Mississippian, Indiana, Hopkins, 3.
Knox dolomite, Ordovician, Tennessee, Keith, 2.
Kokomo (Waterlime) limestone, Silurian, Indiana, Foerste, 3.
Kowak clay, Quaternary, Alaska, Schrader, 1.
Koyukuk, Cretaceous, Alaska, Schrader, 1.
Labette shale, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
Labette shales, Carboniferous, Kansas, Beede and Rogers, 1.
La Brisca formation, Hill (R. T.), 2.
Lafayette formation, Pliocene, Atlantic coast region, Clark, 2.
Lahontan beds, Nevada, Louderback, 1.
Lake beds, Tertiary, Idaho, Lindgren and Drake, 1.
Lake Superior sandstone, Cambrian, Michigan, Bayley, 1.
Lakota sandstone, Cretaceous, Black Hills region, Darton, 3.
Lakota formation, Cretaceous, South Dakota, Darton and Smith, 1.
Lakota formation, Cretaceous, Wyoming, South Dakota, Darton, 1.
Lansdale shales, Pennsylvania, Lyman, 2.
Laramie, North Dakota, Wilder, 2.
Laramie formation, Cretaceous, Black Hills region and Wyoming, Darton, 3.
Laramie formation, Cretaceous, Wyoming, Darton, 1.
Laurel limestone, Silurian, Indiana, Foerste, 3.
Lignitic clay, Tertiary (Eocene), Mississippi, Logan, 2.
Lime Creek shales, Devonian, Iowa, Beyer and Williams, 2.

Geologic formations described—Continued.
Lisburne formation, Devonian, Alaska, Schrader, 1.
Littlehorn limestone, Carboniferous, Wyoming, Darton, 3.
Lockatong, included in Newark, New Jersey, Knapp, 1.
Lookout sandstone, Carboniferous, Georgia, McCallie, 2.
Lorraine formation, Ordovician, Indiana, Foerste, 3.
Lost Gulch monzonite, pre-Cambrian, Arizona, Ransome, 3.
Louisville limestone, Silurian, Indiana, Foerste, 3.
Loup Fork beds, Miocene, Montana, Douglass, 1.
Loup Fork beds, Miocene, South Dakota, Matthew and Gidley, 1.
Loup Fork series, Tertiary, Nebraska, Peterson, 1.
Loyalhanna limestone, Carboniferous, Pennsylvania, Butts, 2.
Madera diorite, pre-Cambrian, Arizona, Ransome, 3.
Magnesian formation, Wisconsin, Weidman, 3.
Magpie dolomite, Permian, Oklahoma, Gould, 1.
Mahoning sandstone, Carboniferous, Pennsylvania, Butts, 2.
Mahoning sandstone, Carboniferous, Pennsylvania, Richardson, 1.
Mahoning sandstone member of the Conemaugh formation, Carboniferous, Pennsylvania, Campbell, 4.
Malone formation, Jurassic, Texas, Richardson, 2.
Maltrata limestone, Cretaceous, Mexico, Hall (C. E.), 1.
Manastash formation, Tertiary, Washington, Smith (G. O.), 1.
Manitou limestone, Ordovician, Colorado, Darton, 3.
Mansfield sandstone, Carboniferous, Indiana, Hopkins, 3.
Maquoketa shales, Iowa, Beyer and Williams, 2.
Marcellus shale, Devonian, New York, Clarke and Luther, 1.
Marion formation, Carboniferous, Kansas, Prosser and Beede, 1.
Mark West andesite, Tertiary, California, Osmont, 1.
Marshall, Carboniferous, Michigan, Gregory, 1.
Marshalltown bed, Cretaceous, New Jersey, Kümmel and Knapp, 1.
Martin limestone, Devonian, Arizona, Ransome, 1, 4.
Matawan formation, Cretaceous, Atlantic coast region, Clark, 2.
Matawan formation, Cretaceous, Maryland, Delaware, and New Jersey, Clark, 1.
Matawan formation, Cretaceous, New Jersey, Knapp, 2.
Matfield shale, Carboniferous, Kansas, Prosser and Beede, 1.

Geologic formations described—Continued.
Mauch Chunk formation, Carboniferous, Pennsylvania, Butts, 2.
Mauch Chunk formation, Carboniferous, Pennsylvania, Campbell, 4.
Mauch Chunk shale, Carboniferous, Pennsylvania, Richardson, 1.
Max Patch granite, Archean, North Carolina and Tennessee, Keith, 2.
Maxville limestone, Carboniferous, Ohio, Orton and Peppel, 1.
Medicine Lodge gypsum, Permian, Oklahoma, Gould, 1.
Meguma series, Nova Scotia, Woodman, 1, 2.
Menominee series, Algonkian, Michigan, Bayley, 1.
Menteth limestone, Devonian, New York, Clarke and Luther, 1.
Mercer limestone, Carboniferous, Ohio, Orton and Peppel, 1.
Mercer shale, Carboniferous, Pennsylvania, Butts, 2.
Merchantville clay, Cretaceous, New Jersey, Kümmel and Knapp, 1.
Merom sandstone, Carboniferous, Indiana, Hopkins, 3.
Michigan group, Carboniferous, Michigan, Grimsley, 3.
Michigan series, Carboniferous, Michigan, Gregory, 1.
Middlesex black shale, Devonian, New York, Clarke and Luther, 1.
Millersburg formation, Carboniferous, Indiana, Fuller and Clapp, 1.
Millsap limestone, Carboniferous (Mississippian), Colorado, Darton, 3.
Minnekahta limestone, Carboniferous, Black Hills region and Wyoming, Darton, 3.
Minnekahta limestone, Carboniferous, South Dakota, Darton and Smith, 1.
Minnekahta limestone, Carboniferous, Wyoming and South Dakota, Darton, 1.
Minnekahta limestone, Carboniferous (Permian), Black Hills region, Jaggar, 1.
Minnelusa formation, Carboniferous, Black Hills region, Jaggar, 1.
Minnelusa formation, Carboniferous (Pennsylvanian ?), Black Hills region, Darton, 3.
Minnelusa sandstone, Carboniferous, South Dakota, Darton and Smith, 1.
Minnelusa sandstone, Carboniferous, Wyoming, South Dakota, Darton, 1.
Minnewaste limestone, Cretaceous, Black Hills region, Darton, 3.
Minnewaste limestone, Cretaceous, South Dakota, Darton and Smith, 1.
Mitchell limestone, Mississippian, Indiana, Hopkins, 3.
Moencopie shales, Utah, Huntington and Goldthwait, 1.
Monmouth formation, Cretaceous, Atlantic coast region, Clark, 2.
Monongahela formation, Carboniferous, Pennsylvania, Campbell, 4.
Monongahela formation, Carboniferous, Pennsylvania, Stone, 2.

Geologic formations described—Continued.

Monroe Creek beds, Tertiary, Nebraska, Peterson, 1.
Montana group, Cretaceous, South Dakota, Todd, 4.
Montana group, Cretaceous, South Dakota, Todd and Hall, 2.
Monterey, California, Osmont, 1.
Monterey shales, Miocene, California, Anderson, 1.
Monterey shale, Miocene, Tertiary, California, Haehl and Arnold, 1.
Monterey shale, Neocene, California, Fairbanks, 2.
Moorefield shale, Carboniferous, Arkansas, Adams (G. I.), 2.
Moorefield shale, Carboniferous, Arkansas, Ulrich, 2.
Morgantown sandstone, Carboniferous, Pennsylvania, Richardson, 1.
Morgantown sandstone member of the Conemaugh formation, Carboniferous, Pennsylvania, Campbell, 4.
Morita formation, Cretaceous, Arizona, Ransome, 1, 4.
Morrison formation, Cretaceous, South Dakota, Darton and Smith, 1.
Morrison formation, Jurassic, Black Hills region, Jaggar, 1.
Morrison shales, Cretaceous, Black Hills region and Wyoming, Darton, 3.
Morrison shale, Cretaceous, Wyoming, South Dakota, Darton, 1.
Morrow formation, Carboniferous, Arkansas, Adams (G. I.), 2.
Morrow formation, Carboniferous, Arkansas, Ulrich, 2.
Moscow shale, Devonian, New York, Clarke and Luther, 1.
Mount Baker lava, Quaternary, Washington, Smith and Calkins, 1.
Mount Stuart granodiorite, pre-Tertiary, Washington, Smith (G. O.), 1.
Mural limestone, Cretaceous, Arizona, Ransome, 1, 4.
Murray slate, Cambrian, North Carolina and Tennessee, Keith, 2.
Naco limestone, Carboniferous, Arizona, Ransome, 1, 4.
Nantahala slate, Cambrian, North Carolina and Tennessee, Keith, 2.
Nanushuk series, Cretaceous, Alaska, Schrader, 1.
Napoleon, Carboniferous, Michigan, Gregory, 1.
Nebo quartzite, Cambrian, North Carolina and Tennessee, Keith, 2.
Nebraska beds, Tertiary, Nebraska, Peterson, 1.
Necoxtla slates, Cretaceous, Mexico, Hall (C. E.), 1.
Negaunee formation, Algonkian, Bayley, 1.
Neosho member, Carboniferous, Kansas, Prosser and Beede, 1.
Neva limestone, Carboniferous, Kansas, Prosser and Beede, 1.

Geologic formations described—Continued.

New Albany black shale, Devonian, Indiana, Hopkins, 3.
Newark system, New Jersey, Knapp, 1.
New Red, Pennsylvania, Lyman, 2.
Niagara group, Silurian, Indiana, Kindle, 3.
Niagara limestone, Silurian, Indiana, Foerste, 3.
Nichols slate, Cambrian, North Carolina and Tennessee, Keith, 2.
Niobrara formation, Cretaceous, Black Hills region, Wyoming and Colorado, Darton, 3.
Niobrara formation, Cretaceous South Dakota, Darton and Smith, 1.
Niobrara formation, Cretaceous, South Dakota, Todd, 4.
Niobrara formation, Cretaceous, South Dakota, Todd and Hall, 1, 2.
Niobrara formation, Cretaceous, Wyoming, Darton, 1.
Noblesville dolomite, Silurian, Indiana, Kindle, 3.
Noel shale, Carboniferous, Arkansas, Adams (G. I.), 2.
Noel shale, Carboniferous, Arkansas, Ulrich, 2,
Nolichucky shale, Cambrian, Tennessee, Keith, 2.
Norman division, Permian, Oklahoma, Gould, 1.
Oneota limestone, Iowa, Beyer and Williams, 2.
Onondaga limestone, Devonian, New York, Clarke and Luther, 1.
Opeche formation, Carboniferous, Black Hills region and Wyoming, Darton, 3.
Opeche formation, Carboniferous, South Dakota, Darton and Smith, 1.
Opeche formation, Carboniferous, Wyoming, South Dakota, Darton, 1.
Orange sand (Lafayette) formation, Tertiary (Pliocene), Mississippi, Logan, 2.
Orindan, California, Osmont, 1.
Oriskany sandstone, Devonian, New York, Clarke and Luther, 1.
Osgood bed, Silurian, Indiana, Foerste, 3.
Osos basalt, California, Fairbanks, 2.
Otero marls, Tertiary (?), New Mexico, Herrick (C. L.), 4.
Ouray limestone, Devonian and Mississippian, Colorado, Cross (W.), 1.
Pacific sandstone, Cambro-Ordovician, Missouri, Ball, 1.
Pacific sandstone, Ordovician, Missouri, Ball and Smith, 1.
Pahasapa formation, Carboniferous, Black Hills region, Jaggar, 1.
Pahasapa limestone, Carboniferous, Wyoming, South Dakota, Darton, 1.
Pahasapa limestone, Carboniferous (Mississippian), Black Hills region, Darton, 3.
Painted Desert formation, Utah, Huntington and Goldthwait, 1.
Parsons limestone, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
Parting quartzite, Devonian, Colorado, Cross (W.) 1.

Geologic formations described—Continued.
Pasayten formation, Cretaceous, Washington, Smith and Calkins, 1.
Paso Robles formation, Neocene, California, Fairbanks, 2.
Patton shale, Carboniferous, Pennsylvania, Butts, 2.
Patton shale lentil of the Pocono formation, Carboniferous, Pennsylvania, Campbell, 4.
Patuxent formation, Cretaceous, Atlantic coast region, Clark, 2.
Pawnee limestone, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
Pawnee limestone, Carboniferous, Kansas, Beede and Rogers, 1.
Payette formation, Tertiary, Idaho, Lindgren and Drake, 2.
Payne formation, Carboniferous, Oklahoma, Kirk, 1.
Pendleton sandstone, Devonian, Indiana, Hopkins, 3.
Pensauken formation, Pleistocene, New Jersey, Kümmel and Knapp, 1.
Pescadero sandstones, Miocene, California, Anderson, 1.
Peshastin formation, pre-Tertiary, Washington, Smith (G. O.), 1.
Pierre shale, Cretaceous, Black Hills region, Wyoming and Colorado, Darton, 3.
Pierre shale, Cretaceous, South Dakota, Darton and Smith, 1.
Pierre shale, Cretaceous, South Dakota, Todd, 4.
Pierre shale, Cretaceous, South Dakota, Todd and Hall, 1, 2.
Pierre shale, Cretaceous, Wyoming, Darton, 1.
Pinal schist, pre-Cambrian, Arizona, Ransome, 1, 3, 4.
Pioneer shale, Cambrian (?), Arizona, Ransome, 3.
Piqua limestone, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
Pismo formation, Neocene, California, Fairbanks, 2.
Pitkin limestone, Carboniferous, Arkansas, Adams (G. I.), 2.
Pitkin limestone, Carboniferous, Arkansas, Ulrich, 2.
Pittsburg limestone, Carboniferous, Ohio, Orton and Peppel, 1.
Plum Point marls, Miocene, Maryland, Shattuck, 2.
Pocono formation, Carboniferous, Pennsylvania, Butts, 2.
Pocono sandstone, Carboniferous, Pennsylvania, Campbell, 4.
Polk Bayou limestone, Ordovician, Arkansas, Adams (G. I.), 2.
Polk Bayou limestone, Ordovician, Arkansas, Ulrich, 2.
Port Clarence limestone, Silurian, Alaska, Collier, 2.
Potomac group, Cretaceous, Atlantic coast region, Clark, 2.
Potsdam formation, Cambrian, Wisconsin, Weidman, 3.

Geologic formations described—Continued.
Pottsville, Carboniferous, Appalachian region, Stevenson (J. J.), 1.
Pottsville, Carboniferous, Appalachian region, White (D.), 1.
Pottsville formation, Carboniferous, Pennsylvania, Butts, 2.
Pottsville formation, Carboniferous, Pennsylvania, Campbell, 4.
Pottsville formation, Carboniferous, Pennsylvania, Richardson, 1.
Poughquag formation, New York, Eckel, 9.
Prattsburg sandstone and shale, Devonian, New York, Clarke and Luther, 1.
Pre-Kansan or Albertan, Pleistocene, Iowa, Beyer and Williams, 2.
Presidio beds, Cretaceous, Texas, Udden, 1.
Procter limestone, Cambrian, Missouri, Ball, 1.
Procter limestone, Cambrian, Missouri, Ball and Smith, 1.
Berea sandstone, Carboniferous, Ohio, Prosser and Cumings, 1.
Purisima formation, Pliocene, Tertiary, California, Haehl and Arnold, 1.
Putnam Hill limestone, Carboniferous, Ohio, Orton and Peppel, 1.
Quartermaster division, Permian, Oklahoma, Gould, 1.
Quinnesec schists, Archean, Michigan, Bayley, 1.
Rancocas formation, Cretaceous, Atlantic coast region, Clark, 2.
Randville dolomite, Algonkian, Michigan, Bayley, 1.
Raritan clay series, Cretaceous, New Jersey, Kümmel and Knapp, 1.
Raritan formation, Cretaceous, New Jersey, Knapp, 2.
Reagan sandstone, Cambrian, Indian Territory and Oklahoma, Taff, 7.
Reagan sandstone, Cambrian, Oklahoma, Gould, 5.
Red Beds, Permian (?), Indian Territory and Oklahoma, Taff, 7.
Red Beds, Permian, Oklahoma, Gould, 1.
Red Beds, Texas, Richardson, 2.
Red Beds, Trias, Wyoming, Spencer (A. C.), 2.
Red Beds, Triassic, Black Hills region, Jaggar, 1.
Red Bluff bed, Tertiary, Mississippi, Casey, 2.
Red Bluff sandstone, Permian, Oklahoma, Gould, 1.
Rensselaer grit, Silurian, New York, Dale, 3.
Rhinestreet black shale, Devonian, New York, Clarke and Luther, 1.
Richmond formations, Ordovician, Indiana, Foerste, 3.
Rio Grande drift, Pleistocene, Texas, Udden, 1.
Ripley formation, Cretaceous, Mississippi, Logan, 2.
Roan gneiss, Archean, North Carolina, Keith, 2.
Rockford Goniatite limestone, Mississippian, Indiana, Hopkins, 3.

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Romney formation, Devonian, Maryland, Prosser, 1.
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Ruin granite, pre-Cambrian, Arizona, Ransome, 3.
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St. Clair limestone, Silurian, Arkansas, Ulrich, 2.
Saint Croix sandstone, Iowa, Beyer and Williams, 2.
St. Elizabeth formation, Cambro-Ordovician, Missouri, Ball, 1.
St. Elizabeth formation, Ordovician, Missouri, Ball and Smith, 1.
St. Helena rhyolite, Tertiary, California, Osmont, 1.
St. Joe limestone, Carboniferous, Arkansas, Adams (G. I.), 2.
St. Joe limestone, Carboniferous, Arkansas, Ulrich, 2.
St. Joe limestone, Mississippian, Missouri, Gould, 4.
St. Mary's formation, Miocene, Maryland, Clark, 2.
St. Mary's formation, Miocene, Maryland, Shattuck, 2.
St. Peter sandstone, Ordovician, Ulrich, 2.
St. Peter sandstone, Wisconsin, Weidman, 3.
St. Stephens limestone, Tertiary, Alabama, Smith (E. A.), 1.
Saline Creek cave-conglomerate, Carboniferous, Missouri, Ball, 1.
Saline Creek cave-conglomerate, Carboniferous, Missouri, Ball and Smith, 1.
Saltsburg sandstone, Carboniferous, Pennsylvania, Butts, 2.
Saltsburg sandstone, Carboniferous, Pennsylvania, Richardson, 1.
Saltsburg sandstone lentil of Conemaugh formation, Carboniferous, Pennsylvania, Campbell, 4.
Sandia series, Carboniferous, New Mexico, Herrick (C. L.), 1.
San Francisco sandstone, California, Osmont, 1.
Sangamon deposits, Quaternary, Indiana and Illinois, Fuller and Clapp, 1.
San Luis formation, Juratrias (?), California, Fairbanks, 2.
San Pablo, California, Osmont, 1.
Santa Margarita formation, Neocene, California, Fairbanks, 2.
Santo Domingo rhyolite, Mexico, Hill, (R. T.), 2.
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Simpson formation, Ordovician, Indian Territory, Taff, 7.
Skajit formation, Upper Silurian, Alaska, Schrader, 1.
Skaneateles shale, Devonian, New York, Clarke and Luther, 1.
Smith or Deep River beds, Miocene, Montana, Douglass, 1.
Snowbird, formation, Cambrian, North Carolina and Tennessee, Keith, 2.
Solitude granite, pre-Cambrian, Arizona, Ransome, 3.
Somerville formation, Carboniferous, Indiana, Fuller and Clapp, 1.
Sonoma tuff, Tertiary, California, Osmont, 1.
Spearfish formation, Triassic (?), Black Hills region and Wyoming, Darton, 3.
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Sunbury shale, Carboniferous, Ohio, Prosser and Cumings, 1.
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Tejon, Tertiary, California, Osmont, 1.
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Tully limestone, Devonian, New York, Clarke and Luther, 1.
Unkpapa sandstone, Jurassic (?), Black Hills region, Darton, 3.
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Utica, Ordovician, Vermont, Perkins, 4.
Utica formation, Ordovician, Indiana, Foerste, 3.
Vancouver series, Triassic and Jurassic, Alaska, Emerson (B. K.), 1.
Van Horn formation, Cambrian, Texas, Richardson, 2.
Vanport limestone, Carboniferous, Pennsylvania, Butts, 2.
Vaquero sandstone, Miocene, Tertiary, California, Haehl and Arnold, 1.
Vaquero sandstone, Neocene, California, Fairbanks, 2.
Vicksburg stage, Tertiary, Mississippi, Casey, 2.
Vilas shale, Carboniferous, Kansas, Adams, Haworth, and Crane, 1.
Viola limestone, Ordovician, Indian Territory and Oklahoma, Taff, 7.
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Wilson Ranch beds, Tertiary, California, Osmont, 1.
Winfield formation, Carboniferous, Kansas, Prosser and Beede, 1.
Winoka gravels, Tertiary, Missouri, Hays, 1.
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Winslow formation, Carboniferous, Arkansas, Adams (G. I.), 2.
Wisconsin, Pleistocene, Iowa, Beyer and Williams, 2.
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Woodbridge clay, Cretaceous, New Jersey, Kümmel and Knapp, 1.
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- Analisis y clasificación de un granate de Pihuamo, Villarello, 1.
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Actinolite, Van Hise, 1.
Alabaster, Farrington, 1.
Albertite, Merrill (G. P.), 1.
Albite, Becke, 1.
Albite, Palache, 3.
Albite, Van Hise, 1.
Allanite, Farrington, 1.
Allanite, Merrill (G. P.), 1.
Allanite, Van Hise, 1.
Allemontite, Merrill (G. P.), 1.
Almandite, Van Hise, 1.
Alunite, Merrill (G. P.), 1.
Amber, Farrington, 1.
Amblygonite, Schaller, 1.
Amesite, Van Hise, 1.
Amphibole, Eyerman, 1.
Analcite, Van Hise, 1.
Andalusite, Farrington, 1.
Andalusite, Van Hise, 1.

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- Andesine, Van Hise, 1.
- Anhydrite, Van Hise, 1.
- Ankerite, Van Hise, 1.
- Anorthite, Van Hise, 1.
- Anorthoclase, Van Hise, 1.
- Anthophyllite, Van Hise, 1.
- Antimony, Hoffmann, 1.
- Apatite, Farrington, 1.
- Apatite, Merrill (G. P.), 1.
- Apatite, Van Hise, 1.
- Apophyllite, Van Hise, 1.
- Aragonite, Van Hise, 1.
- Arfvedsonite, Van Hise, 1.
- Asbestos, Hoffmann, 1.
- Asphalt, Glenn, 6.
- Augite, Van Hise, 1.
- Aurichalcite, Keyes, 3.
- Axinite, Farrington, 1.
- Axinite, Van Hise, 1.
- Azurite, Hoffmann, 1.
- Barite, Glenn, 6.
- Barite, Merrill (G. P.), 1.
- Barite, Rowe, 1.
- Bauxite, Merrill (G. P.), 1.
- Beryl, Farrington, 1.
- Beryl, Kunz, 1.
- Biotite, Eyerman, 1.
- Biotite, Van Hise, 1.
- Bismuthinite, Hoffmann, 1.
- Boothite, Schaller, 1.
- Boracite, Merrill (G. P.), 1.
- Braunite, Merrill (G. P.), 1.
- Brochantite, Lindgren and Hillebrand, 1.
- Brochantite, Ransome, 1.
- Bronzite, Farrington, 1.
- Bronzite, Van Hise, 1.
- Brookite, Van Hise, 1.
- Brucite, Van Hise, 1.
- Bytownite, Van Hise, 1.
- Calamine, Lindgren and Hillebrand, 1.
- Calcite, Glenn, 6.
- Calcite, Merrill (G. P.), 1.
- Calcite, Palache, 3.
- Calcite, Sterrett, 2.
- Calcite, Van Hise, 1.
- Callainite, Farrington, 1.
- Cancrinite, Van Hise, 1.
- Carbonite, Merrill (G. P.), 1.
- Carnotite, Merrill (G. P.), 1.
- Carnotite, Phillips (A. H.), 1.
- Cassiterite, Pratt and Sterrett, 1.
- Celestite, Glenn, 6.
- Celestite, Kraus, 2, 3.
- Celestite, Merrill (G. P.), 1.
- Cerite, Merrill (G. P.), 1.
- Chabazite, Van Hise, 1.
- Chalcedony, Van Hise, 1.
- Chalcocite, Lindgren and Hillebrand, 1.
- Chalcocite, Ransome, 1.
- Chalcopyrite, Ransome, 1.
- Chalcopyrite, Richards, 1.
- Chert, Glenn, 6.
- Chert, Van Hise, 1.
- Chlorastrolite, Farrington, 1.
- Chloritoid, Van Hise, 1.
- Chloromelanite, Bauer, 1.

Minerals described—Continued.
- Chondrodrite, Van Hise, 1.
- Chromite, Merrill (G. P.), 1.
- Chromite, Van Hise, 1.
- Chrompicotite, Hoffmann, 1.
- Chrysoberyl, Farrington, 1.
- Chrysocolla, Farrington, 1.
- Chrysocolla, Lindgren and Hillebrand, 1.
- Chrysolite, Farrington, 1.
- Cleveite, Obalski, 1.
- Clinochlore, Van Hise, 1.
- Clinohumite, Van Hise, 1.
- Cobaltite, Merrill (G. P.), 1.
- Colemanite, Merrill (G. P.), 1.
- Columbite, Merrill (G. P.), 1.
- Copper, Ransome, 1.
- Copper, native, Hoffmann, 1.
- Coral, precious, Farrington, 1.
- Cordierite, Van Hise, 1.
- Coronadite, Lindgren and Hillebrand, 1.
- Corundophilite, Van Hise, 1.
- Corundum, Farrington, 1.
- Corundum, Van Hise, 1.
- Cryolite, Merrill (G. P.), 1.
- Cummingtonite, Van Hise, 1.
- Cuprite, Hoffmann, 1.
- Cuprite, Ransome, 1.
- Cyanite, Farrington, 1.
- Cyanite, Van Hise, 1.
- Cyrtolite, Luquer, 1.
- Descloizite, Merrill (G. P.), 1.
- Diamond, Farrington, 1.
- Diaspore, Merrill (G. P.), 1.
- Diamond, Merrill (G. P.), 1.
- Diaspore, Van Hise, 1.
- Diopside, Farrington, 1.
- Diopside, Van Hise, 1.
- Dioptase, Farrington, 1.
- Dioptase, Lindgren and Hillebrand, 1.
- Dolomite, Glenn, 6.
- Dolomite, Merrill (G. P.), 1.
- Dolomite, Van Hise, 1.
- Edenite, Hoffmann, 1.
- Eglestonite, Moses, 2.
- Elaterite, Merrill (G. P.), 1.
- Emmonsite, Hillebrand, 1.
- Enstatite, Van Hise, 1.
- Epidote, Farrington, 1.
- Epidote, Palache, 3.
- Epidote, Van Hise, 1.
- Epistilbite, Van Hise, 1.
- Epsomite, Merrill (G. P.), 1.
- Euclase, Farrington, 1.
- Euxenite, Farrington, 1.
- Faujasite, Hoffmann, 1.
- Fayalite, Van Hise, 1.
- Fayalite, Weidman, 1.
- Feldspar, Farrington, 1.
- Fergusonite, Farrington, 1.
- Fluorite, Farrington, 1.
- Fluorite, Glenn, 6.
- Fluorite, Merrill (G. P.), 1.
- Fluorite, Van Hise, 1.
- Footeite, Ransome, 1.
- Forsterite, Van Hise, 1.
- Franklinite, Merrill (G. P.), 1.
- Gadolinite, Farrington, 1.

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Galena, Glenn, 6.
Garnet, Blake, 3, 7.
Garnet, Eyerman, 1.
Garnet, Farrington, 1.
Garnet, Merrill (G. P.), 1.
Garnet, Villarello, 1.
Gedrite, Van Hise, 1.
Gehlenite, Van Hise, 1.
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Gibbsite, Merrill (G. P.), 1.
Gibbsite, Van Hise, 1.
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Gismondite, Van Hise, 1.
Glauberite, Merrill (G. P.), 1.
Glauconite, Van Hise, 1.
Glaucophane, Van Hise, 1.
Gmelinite, Van Hise, 1.
Grahamite, Merrill (G. P.), 1.
Graphite, Van Hise, 1.
Grossularite, Van Hise, 1.
Grünerite, Van Hise, 1.
Gypsum, Glenn, 6.
Gypsum, Van Hise. 1.
Halite, Merrill (G. P.), 1.
Halloysite, Schaller, 1.
Halloysite, Watson (T. L.), 7.
Harmotome, Van Hise, 1.
Hausmannite, Merrill (G. P.), 1.
Haüynite, Van Hise, 1.
Hedenbergite, Van Hise, 1.
Hematite, Farrington, 1.
Hematite, Kraus, 3.
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Hornblende, Van Hise, 1.
Hübnerite, Merrill (G. P.), 1.
Humite, Van Hise, 1.
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Kaolinite, Van Hise, 1.
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Lampadite, Hoffmann, 1.
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Laumontite, Palache, 3.
Laumontite, Van Hise, 1.
Lawsonite, Schaller and Hillebrand, 1.
Lazurite, Merrill (G. P.), 1.
Lepidolite, Farrington, 1.
Leucite, Van Hise, 1.
Libethenite, Lindgren and Hillebrand, 1.
Limonite, Glenn, 6.
Limonite. Hoffmann, 1.
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Lithiophilite, Merrill (G. P.), 1.
Magnesite, Hoffmann, 1.
Magnesite, Merrill (G. P.), 1.
Magnesite, Van Hise, 1.
Magnetite, Hoffmann, 1.
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Martite, Farrington, 2.
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Melanite, Van Hise, 1.
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Meteorite, Glenn, 2.
Meteorite, Klein, 2.
Meteorite, Kunz, 2.
Meteorite, Tassin, 1.
Meteorite, Ward, 1, 2.
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Meteorites, Cohen, 5.
Meteorites, Ward, 3.
Mica, Schwarz, 1.
Microcline, Van Hise, 1.
Millerite, Palache and Wood, 1.
Mirabilite, Merrill (G. P.), 1.
Moldavite, Farrington, 1.
Molybdenite, Crook, 2.
Molybdenite, Merrill (G. P.), 1.
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Monazite, Merrill (G. P.), 1.
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Morencite, Lindgren and Hillebrand, 1.
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Natrolite, Eyerman, 1.
Natrolite, Van Hise, 1.
Nephelite, Van Hise, 1.
Noselite, Van Hise, 1.
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Opal, Van Hise, 1.
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Orthoclase, Van Hise, 1.
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- Phillipsite, Van Hise, 1.
- Phlogopite, Van Hise, 1.
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- Pisanite, Schaller, 1.
- Polianite, Merrill (G. P.), 1.
- Polycrase, Farrington, 1.
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- Prehnite, Farrington, 1.
- Prehnite, Van Hise, 1.
- Prochlorite, Eyerman, 1.
- Prochlorite, Van Hise, 1.
- Psilomelane, Merrill (G. P.), 1.
- Pyrite, Farrington, 1.
- Pyrite, Glenn, 6.
- Pyrite, Nicol, 1.
- Pyrite, Palache, 3.
- Pyrite, Ransome, 1.
- Pyrite, Van Hise, 1.
- Pyrites, Merrill (G. P.), 1.
- Pyrolusite, Merrill (G. P.), 1.
- Pyrope, Van Hise, 1.
- Pyrophyllite, Merrill (G. P.), 1.
- Pyrrhotite, Hoffmann, 1.
- Pyrrhotite, Van Hise, 1.
- Quartz, Farrington, 1.
- Quartz, Glenn, 6.
- Quartz, Merrill (G. P.), 1.
- Quartz, Van Hise, 1.
- Quartz pseudomorph, Schaller, 1.
- Realgar, Merrill (G. P.), 1.
- Rhodonite, Farrington, 1.
- Rhodonite, Merrill (G. P.), 1.
- Rhodonite, Palache, 3.
- Riebeckite, Van Hise, 1.
- Rutile, Farrington, 1.
- Rutile, Hoffmann, 1.
- Rutile, Merrill (G. P.), 1.
- Rutile, Van Hise, 1.
- Sahlite, Van Hise, 1.
- Samarskite, Farrington, 1.
- Samarskite, Merrill (G. P.), 1.
- Scheelite, Merrill (G. P.), 1.
- Scolecite, Van Hise, 1.
- Selenite, Rowe, 1.
- Sepiolite, Merrill (G. P.), 1.
- Serpentine, Eyerman, 1.
- Serpentine, Farrington, 1.
- Serpentine, Van Hise, 1.
- Siderite, Van Hise, 1.
- Sillimanite, Van Hise, 1.
- Smithsonite, Farrington, 1.
- Sodalite, Van Hise, 1.
- Spangolite, Lindgren and Hillebrand, 1.
- Spessartite, Kunz, 1.
- Spessartite, Van Hise, 1.
- Sphalerite, Eakle, 2.
- Sphalerite, Glenn, 6.
- Sphalerite, Ransome, 1.
- Spinel, Farrington, 1.
- Spinel, Van Hise, 1.
- Spodumene, Farrington, 1.
- Spodumene, Merrill (G. P.), 1.
- Spodumene, Van Hise, 1.
- Staurolite, Farrington, 1.

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- Staurolite, Van Hise, 1.
- Steatite, Merrill (G. P.), 1.
- Stilbite, Eyerman, 1.
- Stilbite, Van Hise, 1.
- Strontianite, Merrill (G. P.), 1.
- Talc, Van Hise, 1.
- Tantalite, Merrill (G. P.), 1.
- Tellurium, native, Hoffmann, 1.
- Tenorite, Ransome, 1.
- Terlinguaite, Moses, 2.
- Thenardite, Merrill (G. P.), 1.
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- Thomsonite, Van Hise, 1.
- Titanite, Farrington, 1.
- Titanite, Van Hise, 1.
- Topaz, Farrington, 1.
- Topaz, Kunz, 1.
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- Arcas of the California Neocene, Osmont, 2.
- Cambrian faunas, Protolenus, Matthew (G. F.), 3.
- Cambrian rocks in eastern Canada, Matthew (G. F.), 5.
- Canadian species of Trocholites, Whiteaves, 1.

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New species of Pleurotoma from the Pliocene of California, Raymond (W. J.), 1.
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Notes on past collecting season, Grant (C. C.), 1.
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Paleontology of the Boulder area, Henderson, 3.
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Paleontology of the Niagara of northern Indiana, Kindle and Breger, 1.
Paleozoic cockroaches, Sellards, 1.
Paleozoic Cypridina from Canada, Jones, 1.
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Permian Xiphosuran from Kansas, Beecher, 1.
Phylogeny of Fusus, Grabau, 2.
Pleistocene and Pliocene fossil shells, Rivers, 1.
Pleistocene fauna of Sankaty Head, Cushman, 3.
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Stromatoceria of Isle la Motte, Seely, 2.
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Tropidoleptus fauna at Canandaigua Lake, Raymond (P. E.), 2.
True nature of Tamiosoma, Dall, 6.
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Arthritis in the Lansing man, Parker, 1.
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Characters of Pteranodon, Eaton, 1.
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Cretaceous fish Portheus molossus, Osborn, 10.
Cretaceous turtles of New Jersey, Wieland, 1, 2.
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Dryptosaurus incrassatus, Lambe, 1.
Eocene Mammalia, Wortman, 1.
Eocene whales, Lucas, 4.
Euceratherium, a new ungulate from the Quaternary caves of California, Sinclair and Furlong, 1.
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Fossil egg from Arizona, Morgan and Tallmon, 1.
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Fossil porcupine from Arizona, Allen, 1.
Fossil turtles, Hay, 1.
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John Day fossil beds, Merriam, 1.

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Miocene rhinoceroses, Osborn, 9.
Nature of Edestus and related forms, Eastman, 1.
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Neocene lake beds of Montana, Douglass, 1.
New batrachian and reptile from Trias of Arizona, Lucas, 1.
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New reptile from Triassic of Connecticut Valley, Emerson and Loomis, 1.
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New turtles from Judith River beds of Montana, Hay, 3.
Note on Hylopus of Dawson, Matthew, 4.
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Stomach stones and food of plesiosaurs, Brown, 1.
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- *Vertebrate*—Continued.
  - Structure and relationships of Opisthocœlian dinosaurs, Brachiosauridæ, Riggs, 2.
  - Structure of forefoot of Dimetrodon, Case, 3.
  - Teleorhinus browni, Osborn, 8.
  - Teleosts from the Platte Cretaceous series, Cragin, 1.
  - Tissu osseux chez certains poissons des terrains palæozoiques de Canyon City, Vaillant, 1.
  - Tortoise from Colorado Miocene, Hay, 6.
  - Tritubercular theory, Osborn, 2.
  - Ueber Diacranodus texensis Cope, Broili, 2.
  - Vertebrate fossils from Permian beds of Oklahoma, Case, 1.
  - When did the American mammoth and mastodon become extinct, Lloyd, 1.
- *Paleobotany.*
  - Brandon clays, Woodworth, 1.
  - Coal Measure forest near Socorro, Herrick (C. L.), 1.
  - Collection de vegetaux fossiles des Etats-Unis, Bureau, 1.
  - Cretaceous near Cliffwood, Berry, 2.
  - Flora of the Matawan formation, Berry, 1.
  - Fossil floras of the Yukon, Knowlton, 2.
  - Fossil fruits of Tertiary lignite of Brandon, Perkins, 6.
  - Fossil plant remains at Kreisherville, Hollick, 5.
  - Fossil plants from Kansas, Hollick, 6.
  - Fossil plants from Kukak Bay, Knowlton, 1.
  - Fossil Sequoia from the Sierra Nevada, Jeffrey, 1.
  - Lignite of Brandon and its fossils, Perkins, 5.
  - New seed-bearing fern, White (D.), 4.
  - Paleobotany of Cretaceous of Long Island, Hollick, 2.
  - Paleontology of the Maryland Miocene deposits, Angiospermæ, Hollick, 1.
  - Paleontology of the Maryland Miocene deposits, Thallophyta-Diatomaceæ, Boyer, 1.
  - Petrified forests and Painted Desert of Arizona, Carter, 1.
  - Proembryo of the Bennettiteæ, Wieland, 3.
  - Seeds of Aneimites, White (D.), 5.
  - Tertiary plants from Canada and the United States, Penhallow, 1.
- *General.*
  - Bibliography and index of North American geology, paleontology, petrology, and mineralogy for 1903, Weeks, 1.
  - Organic remains in ore deposits, Lakes, 15.
  - Sandblast in cleaning fossils, Osborn, 13.
- *Genera and species described.*
  - Abra longicallus (Scacchi), Glenn, 5.
    - marylandica n. sp., Glenn, 5.
  - Acanthoceras mantelli Sow., Lasswitz, 1.
    - hoplitoides n. sp., Lasswitz, 1.
    - rhotomagense Sow., Lasswitz, 1.
  - Acanthosphæra parvula Vinassa, Martin, 6.
  - Aceratherium acutum Marsh, Osborn, 9.
    - megalodum Cope, Osborn, 9.
    - profectum Matthew, Osborn, 9.
  - Acheloma, Broili, 1.
  - Achitherium minimus n. sp., Douglass, 1.

Paleontology—Continued.
- *Genera and species described*—Continued.
  - Actæon calvertensis n. sp., Martin, 3.
    - ovoides Conrad, Martin, 3.
    - pusillus (Forbes), Martin, 3.
    - shilohensis Whitfield, Martin, 3.
  - Actinocrinus multiramosus var. altidorsatus n. var., Rowley, Greene, 3.
  - Actinocyclus ellipticus Grunow, Boyer, 1.
    - moniliformis Ralfs, Boyer, 1.
  - Actinoptychus heliopelta Grunow, Boyer, 1.
    - undulatus Kützing, Boyer, 1.
  - Actinostroma moosensis n. sp., Parks, 1.
  - Adeonellopsis umbilicata (Lonsdale), Ulrich and Bassler, 4.
  - Adeorbis supranitidus S. Wood, Martin, 3.
  - Adocus Cope, Wieland, 1.
    - punctatus Marsh, Wieland, 1.
  - Aesculus arctica n. sp., Knowlton, 1.
  - Aetobatis arcuatus Agassiz, Eastman, 6.
  - Agelacrinus, Spencer (W. K.), 1.
    - cincinnatiensis Roemer, Spencer (W. K.), 1.
    - (Lepidodiscus) pileus Hall, Spencer (W. K.), 1.
  - Aligena æquata (Conrad), Glenn, 5.
    - æquata var. nuda Dall, Glenn, 5.
    - pustulosa Dall, Glenn, 5.
  - Alnus coryfolia Lesq., Knowlton, 1.
  - Allonema n. gen., Ulrich and Bassler, 1.
    - fusiforme (Nicholson and Etheridge, jr.), Ulrich and Bassler, 1.
    - ? minimum n. sp., Ulrich and Bassler, 1.
    - moniliforme (Whiteaves) and var. aggregatum n. var., Ulrich and Bassler, 1.
    - waldronense n. sp., Ulrich and Bassler, 1.
  - Alticamelus, Matthew (W. D.), 2.
  - Amalthea marylandica n. sp., Martin, 3.
  - Amblypus E. Hitchcock, Lull, 1.
    - dextratus E. Hitchcock, Lull, 1.
  - Amphiblestrum agellus n. sp., Ulrich and Bassler, 4.
    - constrictum n. sp., Ulrich and Bassler, 4.
  - Amphicœlia neglecta McChesney, Kindle and Breger, 1.
  - Amplexopora Ulrich, Ulrich and Bassler, 2.
    - ampla n. sp., Ulrich and Bassler, 2.
    - columbiana n. sp., Ulrich and Bassler, 2.
    - cylindracea n. sp., Ulrich and Bassler, 2.
    - filiosa (D'Orbigny), Ulrich and Bassler, 2.
  - Anaphragma n. gen., Ulrich and Bassler, 2.
    - mirabile n. sp., Ulrich and Bassler, 2.
  - Anaptomorphus Cope, Wortman, 1.
    - æmulus Cope, Wortman, 1.
  - Anastrophia internascens Hall, Kindle and Breger, 1.
  - Anchippus Leidy, Gidley, 1.
  - Anchisauripus n. gen., Lull, 1.
    - dananus (E. Hitchcock), Lull, 1.
    - exsertus (E. Hitchcock), Lull, 1.
    - hitchcocki n. sp., Lull, 1.
    - minusculus (E. Hitchcock), Lull, 1.
    - tuberatus (E. Hitchcock), Lull, 1.
    - tuberosus (E. Hitchcock), Lull, 1.
  - Ancyropus E. Hitchcock, Lull, 1.
    - heteroclitus E. Hitchcock, Lull, 1.
  - Andromeda flexuosa Newb., Hollick, 2.

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Genera and species described—Continued.

- Andromeda latifolia Newb., Hollick, 2.
  - parlatorii Heer, Berry, 1.
- Aneimites fertilis n. sp., White (D.), 4, 5.
- Anisodexis, Broili, 1.
- Anodontopsis wabashensis n. sp., Kindle and Breger, 1.
- Anolcites Mojsisovics, Smith (J. P.), 2.
- Anomalina d'Orbigny, Bagg, 3.
  - grosserugosa (Gümbel), Bagg, 3.
- Anomalocystites Hall, Schuchert, 4.
  - cornutus Hall, Schuchert, 4.
  - ? disparilis Hall, Schuchert, 4.
- Anomia aculeata Gmelin, Glenn, 5.
  - simplex d'Orbigny, Glenn, 5.
- Anomoepus E. Hitchcock, Lull, 1.
  - crassus (C. H. Hitchcock), Lull, 1.
  - cuneatus C. H. Hitchcock, Lull, 1.
  - curvatus E. Hitchcock, Lull, 1.
  - gracillimus (E. Hitchcock), Lull, 1.
  - intermedius E. Hitchcock, Lull, 1.
  - isodactylus C. H. Hitchcock, Lull, 1.
  - minimus E. Hitchcock, Lull, 1.
  - scambus E. Hitchcock, Lull, 1.
- Anoplotheca congregata n. sp., Kindle and Breger, 1.
- Anthocyrtium doronicum Haeckel, Martin, 6.
- Anticheiropus E. Hitchcock, Lull, 1.
  - hamatus E. Hitchcock, Lull, 1.
  - pilulatus E. Hitchcock, Lull, 1.
- Antipus E. Hitchcock, Lull, 1.
  - bifidus E. Hitchcock, Lull, 1.
  - flexiloquus E. Hitchcock, Lull, 1.
- Apatichnus E. Hitchcock, Lull, 1.
  - circumagens E. Hitchcock, Lull, 1.
  - minus (E. Hitchcock), Lull, 1.
  - trifidus Dawson, Matthew (G. F.), 1.
- Apeibopsis Heer, Perkins, 6.
  - gaudinii Lx., Perkins, 6.
  - heerii Lx., Perkins, 6.
  - parva n. sp., Perkins, 6.
- Aphelops (? Diceratherium) brachyodus n. sp., Osborn, 9.
  - ceratorhinus Douglass, Osborn, 9.
  - fossiger Cope, Osborn, 9.
  - jemezanus Cope, Osborn, 9.
  - malacorhinus Cope, Osborn, 9.
  - (? Peraceras) planiceps n. sp., Osborn, 9.
- Aphyllostylus n. gen., Whiteaves, 2.
  - gracilis n. sp., Whiteaves, 2.
- Apiocystites Forbes, Schuchert, 4.
  - elegans Hall, Schuchert, 4.
- Arachnichnus dehiscens E. Hitchcock, Lull, 1.
- Aralia coriacea Vel., Hollick, 2.
  - palmata Newb., Berry, 1.
- Arachnichnus E. Hitchcock, Lull, 1.
- Arachnocrinus extensus W. & Sp., Rowley, Greene, 2.
- Arca (Scapharca) arata Say, Glenn, 5.
  - camuloensis n. sp., Osmont, 2.
  - canalis Conrad, Osmont, 2.
  - (Scapharca) clisea Dall, Glenn, 5.
  - (Scapharca) elnia n. sp., Glenn, 5.
  - (Scapharca) idonea Conrad, Glenn, 5.
  - (Noetia) incile Say, Glenn, 5.
  - (Barbatia) marylandica Conrad, Glenn, 5.

Paleontology—Continued.

Genera and species described—Continued.

- Arca microdonta Conrad, Osmont, 2.
  - montereyana n. sp., Osmont, 2.
  - (Scapharca) staminea Say, Glenn, 5.
  - (Scapharca) subrostrata Conrad, Glenn, 5.
  - trilineata Conrad, Osmont, 2.
  - (Barbatia) virginiæ Wagner, Glenn, 5.
- Archæocidaris M'Coy, Klem, 1.
  - aculeatus Shumard, Klem, 1.
  - agassizi Hall, Klem, 1.
  - biangulatus Shumard, Klem, 1.
  - cratis White, Klem, 1.
  - dininni White, Klem, 1.
  - edgarensis Worthen and Miller, Klem, 1.
  - gracilis Newberry, Klem, 1.
  - illinoisensis Worthen and Miller, Klem, 1.
  - keokuk Hall, Klem, 1.
  - legrandensis Miller and Gurley, Klem, 1.
  - longispinus Newberry, Klem, 1.
  - megastylus Shumard, Klem, 1.
  - mucronatus Meek and Worthen, Klem, 1.
  - newberryi Hambach, Klem, 1.
  - norwoodi Hall, Klem, 1.
  - ornatus Newberry, Klem, 1.
  - shumardanus Hall, Klem, 1.
  - spinoclavatus Worthen and Miller, Klem, 1.
  - triplex White, Klem, 1.
  - triserratus Meek, Klem, 1.
  - trudifer White, Klem 1.
  - wortheni Hall, Klem, 1.
- Archoblattina, Sellards, 1.
  - beecheri, Sellards, 1.
- Arenicolites chemungensis n. sp., Whitfield, 3.
- Argoides E. Hitchcock, Lull, 1.
  - isodactyletus (E. Hitchcock), Lull, 1.
- Argoides redfieldianus E. Hitchcock, Lull, 1.
  - macrodactylotus (E. Hitchcock), Lull, 1.
- Aristolochia obscura Lx., Perkins, 6.
- Aristolochites acutus n. sp., Perkins, 6.
  - apicalis n. sp., Perkins, 6.
  - brandonianus n. sp., Perkins, 6.
  - crassicrostatus n. sp., Perkins, 6.
  - conoideus n. sp., Perkins, 6.
  - cuneatus n. sp., Perkins, 6.
  - curvata (Lx.), Perkins, 6.
  - dubius n. sp., Perkins, 6.
  - elegans n. sp., Perkins, 6.
  - excavatus n. sp., Perkins, 6.
  - globosus n. sp., Perkins, 6.
  - irregularis n. sp., Perkins, 6.
  - latisulcatus n. sp., Perkins, 6.
  - majus n. sp., Perkins, 6.
  - ovoides n. sp., Perkins, 6.
  - rugosus n. sp., Perkins, 6.
  - sulcatus n. sp., Perkins, 6.
- Arthracantha punctobrachiata Williams, Wood (Elvira), 1.
- Arthrodendron n. gen., Ulrich, 1.
  - diffusum n. sp., Ulrich, 1.
- Asaphis centenaria (Conrad), Glenn, 5.
- Ascodictyon Nicholson and Etheridge, jr., Ulrich and Bassler, 1.
  - floreale n. sp., Ulrich and Bassler, 1.
  - parvulum n. sp., Ulrich and Bassler, 1.
  - siluriense Vine, Ulrich and Bassler, 1.

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Genera and species described—Continued.

- Ascodictyon sparsum n. sp., Ulrich and Bassler, 1.
  - stellatum Nicholson and Etheridge, jr., Ulrich and Bassler, 1.
- Aspideretes beecheri n. sp., Hay, 1.
  - beecheri Hay, Hay, 3.
- Aspidonectes tritor, Hay, 5.
- Aspidosaurus chiton n. gen. and sp., Broili, 1.
- Astarte symmetrica Conrad, Glenn, 5.
  - calvertensis n. sp., Glenn, 5.
  - castrana n. sp., Glenn, 5.
  - cuneiformis Conrad, Glenn, 5.
  - obruta Conrad, Glenn, 5.
  - parma Dall, Glenn, 5.
  - perplana Conrad, Glenn, 5.
  - thisphila n. sp., Glenn, 5.
  - thomasii Conrad, Glenn, 5.
  - vicina Say, Glenn, 5.
- Asthenotoma Harr. et Burr, Casey, 1.
  - eximia n. sp., Casey, 1.
  - shaleri Vgn., Casey, 1.
  - strigosa n. sp., Casey, 1.
  - texana Gabb, Casey, 1.
- Astrangia (Cœnangia) conradi n. sp., Vaughan, 3.
  - lineata (Conrad), Vaughan, 3.
- Astrhelia palmata (Goldfuss), Vaughan, 3.
- Astrodon, Lucas, 2.
- Atactopora Ulrich, Ulrich and Bassler, 2.
  - angularis, n. sp., Ulrich and Bassler, 2.
  - hirsuta Ulrich, Ulrich and Bassler, 2.
  - maculata Ulrich, Ulrich and Bassler, 2.
- Atrina harrisii Dall., Glenn, 5.
  - piscatoria n. sp., Glenn., 5.
- Atrypa calvini Nettleroth, Kindle and Breger, 1.
  - reticularis Linnæus, Kindle and Breger, 1.
- Aulacodiscus rogersii (Bailey), Boyer, 1.
- Aviculipecten McCoy, Girty, 3, 4.
- Aviculipecten, Hind, 1.
- Baculites aspero-anceps n. sp., Lasswitz, 1.
- Baena callosa n. sp., Hay, 3.
  - cephalica n. sp., Hay, 1.
  - marshi n. sp., Hay, 1.
- Balæna affinis Owen, Case, 4.
- Balænoptera sursiplana Cope, Case, 4.
- Balanus concavus Bronn, Cushman, 4.
  - concavus Bronn, Martin, 2.
  - proteus Conrad, Cushman, 4.
- Baptemys wyomingensis Leidy, Hay, 1.
- Barnea (Scobina) arcuata (Conrad), Glenn, 5.
- Baropus lentus Marsh, Matthew, 1.
- Barycrinus hoveyi Hall sp., Whitfield, 2.
- Batocrinus crassitestus n. sp., Rowley, Greene, 1.
  - davisi Rowley, Greene, 1.
  - davisi var. lanesvillensis n. var., Rowley, Greene, 1.
  - davisi var. sculptus n. var., Rowley, Greene, 1.
  - icosidactylus Casseday, Rowley, Greene, 1.
  - irregularis Casseday, Rowley, Greene, 1.
  - magnirostris, n. sp., Rowley, Greene, 1.
  - spergenensis Miller, Rowley, Greene, 3.
- Batrachopus E. Hitchcock, Lull, 1.
  - bellus (E. Hitchcock), Lull, 1.
  - deweyanus E. Hitchcock, Lull, 1.
  - dispar n. sp., Lull, 1.
  - gracilior (E. Hitchcock), Lull, 1.
  - gracilis (E. Hitchcock), Lull, 1.
- Bellerophon pelops Hall, Parks, 1.
- Beyrichites Waagen, Smith (J. P.), 2.
  - rotelliformis Meek, Smith (J. P.), 2.
- Bicarpellites n. gen., Perkins, 6.
  - grayana (Lx., sp.), Perkins, 6.
  - knowltoni n. sp., Perkins, 6.
  - minimus n. sp., Perkins, 6.
  - obesus n. sp., Perkins, 6.
  - rotundus n. sp., Perkins, 6.
  - rugosus n. sp., Perkins, 6.
  - vermontanus (Lx.), Perkins, 6.
- Biddulphia acuta (Ehrenberg), Boyer, 1.
  - condecora (Ehrenberg), Boyer, 1.
  - decipiens Grunow, Boyer, 1.
  - interpunctata (Grunow), Boyer, 1.
  - semicircularis (Brightwell), Boyer, 1.
  - suborbicularis Grunow, Boyer, 1.
  - tessellata (Greville), Boyer, 1.
- Blastomeryx Cope, Matthew (W. D.), 1.
  - gemmifer Cope, Matthew (W. D.), 1.
  - wellsi n. sp., Matthew (W. D.), 1.
- Bolivina d'Orbigny, Bagg, 3.
  - beyrichii var. alata Seguenza, Bagg, 3.
- Bornia depressa n. sp., Glenn, 5.
  - mactroides (Conrad), Glenn, 5.
  - marylandica n. sp., Glenn, 5.
  - triangula Dall, Glenn, 5.
- Bothriolepis coloradensis n. sp., Eastman, 4.
  - major (Ag.), Eastman, 4.
- Botryocrinus americanus n. sp., Rowley, Greene, 2.
- Brachiosaurus Riggs, Riggs, 2.
  - altithorax Riggs, Riggs, 2.
- Brachybrachium brevipes, n. gen. and sp., Williston, 5.
- Brachyphyllum macrocarpum Newb., Hollick, 2.
- Brandonia n. gen., Perkins, 6.
  - globulus n. sp., Perkins, 6.
- Brontosaurus sp., Osborn, 7.
- Bryograptus Lapworth, Ruedemann, 1.
  - lapworthi n. sp., Ruedemann, 1.
  - pusillus n. sp., Ruedemann, 1.
- Bucania sp. undet., Kindle and Breger, 1.
- Buccinofusus parilis Conrad, Martin, 3.
- Buccinum? sp., Dall, 1.
- Bulliopsis integra Conrad, Martin, 3.
  - marylandica Conrad, Martin, 3.
  - quadrata Conrad, Martin, 3.
- Cadulus newtonensis Meyer and Aldrich, Martin, 3.
  - thallus (Conrad), Martin, 3.
- Cænopus persistens n. sp., Osborn, 9.
- Cæsalpinia ovalifolia n. sp., Hollick, 1.
- Cæcum calvertense n. sp., Martin, 3.
  - greensboroense n. sp., Martin, 3.
  - patuxentium n. sp., Martin, 3.
- Calceocrinus alleni n. sp., Rowley, 1.
- Calliostoma aphelium Dall., Martin, 3.
  - bellum (Conrad), Martin, 3.

Paleontology—Continued.
- *Genera and species described*—Continued.
  - Calliostoma calvertanum n. sp., Martin, 3.
    - distans (Conrad), Martin, 3.
    - eboreum (Wagner), Martin, 3.
    - humile (Conrad), Martin, 3.
    - marylandicum, n. sp., Martin, 3.
    - peralveatum (Conrad), Martin, 3.
    - philanthropus (Conrad), Martin, 3.
    - philanthropus var., Martin, 3.
    - reclusum (Conrad), Martin, 3.
    - virginicum (Conrad), Martin, 3.
    - wagneri Dall, Martin, 3.
  - Callocardia (Pitaria) kincaidii n. sp., Dall, 1.
    - (Agriopoma) prunensis n. sp., Glenn, 5.
    - (Agriopoma) sayana (Conrad), Glenn, 5.
    - (Agriopoma) subnasuta (Conrad), Glenn, 5.
  - Callocystites Hall, Schuchert, 4.
    - canadensis (Billings), Schuchert, 4.
    - jewettii Hall, Schuchert, 4.
  - Callograptus Hall, Ruedemann, 1.
    - cf. diffusus Hall, Ruedemann, 1.
    - salteri Hall, Ruedemann, 1.
  - Callonema bellatula Hall, Parks, 1.
  - Calloporina n. gen., Ulrich and Bassler, 2.
    - parva n. sp., Ulrich and Bassler, 2.
  - Calycites alatus n. sp., Hollick, 2.
  - Calymene platys Green, Parks, 1.
    - cf. vogdesi Foerste, Kindle and Breger, 1.
  - Calyptræa aperta (Solander), Martin, 3.
    - centralis (Conrad), Martin, 3.
    - greensboroensis n. sp., Martin, 3.
  - Camarocrinus Hall, Schuchert, 4.
    - saffordi Hall, Schuchert, 4.
    - stellatus Hall, Schuchert, 4.
    - ulrichi Schuchert, Schuchert, 4.
    - ulrichi stellifer n. var., Schuchert, 4.
  - Camarotœchia cf. acinus Hall, Kindle and Breger, 1.
  - Campodus, Eastman, 1.
  - Campyloprion, Eastman, 1.
  - Cancellaria alternata Conrad, Martin, 3.
    - (Trigonostoma) biplicifera Conrad, Martin, 3.
    - (Sveltia) calvertensis n. sp., Martin, 3.
    - corbula Conrad, Martin, 3.
    - engonata Conrad, Martin, 3.
    - luneta Conrad, Martin, 3.
    - (Admete) marylandica n. sp., Martin, 3.
    - (Cancellariella) neritoidea n. sp., Martin, 3.
    - (Sveltia) patuxentia n. sp., Martin, 3.
    - (Trigonostoma) perspectiva Conrad, Martin, 3.
    - prunicola n. sp., Martin, 3.
    - rapella n. sp., Johnson (C. W.), 1.
    - reticuloides n. sp., Martin, 3.
    - (Sveltia) sp., Martin, 3.
  - Cancellariella n. subg., Martin, 3.
  - Cancellophycus rhombicum n. sp., Ulrich, 1.
  - Cannartidium sp., Martin, 6.
  - Cannartiscus amphicylindricus Haeckel, Martin, 6.
    - marylandicus n. sp., Martin, 6.
  - Capromeryx Matthew, Matthew (W. D.), 1.
    - furcifer Matthew, Matthew (W. D.), 1.

Paleontology—Continued.
- *Genera and species described*—Continued.
  - Carcharias collata n. sp., Eastman, 6.
    - (Prionodon) egertoni (Agassiz), Eastman, 6.
    - incidens n. sp., Eastman, 6.
    - lævissimus (Cope), Eastman, 6.
    - magna (Cope), Eastman, 6.
  - Carcharodon megalodon (Charlesworth), Eastman, 6.
  - Cardiocephalus sternbergi n. gen. and sp., Broili, 1.
  - Cardita protracta (Conrad), Glenn, 5.
  - Cardium (Cerastoderma) calvertensium n. sp., Glenn, 5.
    - (Cerastoderma) craticuloide Conrad, Glenn, 5.
    - (Fragum) medium Linné, Glenn, 5.
    - (Cerastoderma) laqueatum Conrad, Glenn, 5.
    - (Cerastoderma) leptopleurum Conrad, Glenn, 5.
    - (Lævicardium) mortoni Conrad, Glenn, 5.
    - (Cerastoderma) patuxentium n. sp., Glenn, 5.
  - Carpites Schimper, 6.
    - inequalis n. sp., Perkins, 6.
    - ovalis n. sp., Perkins, 6.
    - trigonus n. sp., Perkins, 6.
  - Carpolithes Schlotheim, 6.
    - brandonianus Lx., Perkins, 6.
    - elongatus n. sp., Perkins, 6.
    - emarginatus n. sp., Perkins, 6.
    - grandis n. sp., Perkins, 6.
    - hitchcockii n. sp., Perkins, 6.
    - juglandiformis Berry, Berry, 1.
    - mucronatus n. sp., Perkins, 6.
    - obtusus n. sp., Perkins, 6.
    - ovatus n. sp., Perkins, 6.
    - parvus n. sp., Perkins, 6.
    - simplex n. sp., Perkins, 6.
    - solidus n. sp., Perkins, 6.
    - vermontanus n. sp., Perkins, 6.
  - Caryocaris Salter, Ruedemann, 1.
    - oblongus Gurley, Ruedemann, 1.
  - Carychium bermudense n. sp., Gulick, 1.
  - Cassis cælata Conrad, Martin, 3.
    - sp., Dall, 1.
  - Caulinites inquirendus n. sp., Hollick, 2.
  - Celastrus arctica Heer, Hollick, 2.
  - Cellepora cribrosa n. sp., Ulrich and Bassler, 4.
    - massalis n. sp., Ulrich and Bassler, 4.
  - Cenosphæra porosissima Vinassa, Martin, 6.
  - Centrosaurus n. gen., Lambe, 3.
    - apertus n. sp., Lambe, 3, 4.
  - Cephalotropis Cope, Case, 4.
    - coronatus Cope, Case, 4.
  - Cetophis heteroclitus Cope, Case, 4.
  - Cetotherium cephalum Cope, Case, 4.
    - megalophysum Cope, Case, 4.
    - parvum Trouessart, Case, 4.
  - Ceratites de Haan, Smith (J. P.), 2.
    - (Gymnotoceras) blakei Gabb, Smith (J. P.), 2.
    - vogdesi n. sp., Smith (J. P.), 2.
  - Ceratocephala goniata Warder, Kindle and Breger, 1.

Paleontology—Continued.

Genera and species described—Continued.

- Ceraurus (Crotalocephalus) niagarensis Hall, Kindle and Breger, 1.
- Cerithiopsis calvertensis n. sp., Martin, 3
  - subulata (Montagu), Martin, 3.
- Cerithium sp., Dall, 1.
- Cervalces americanus (Harlan), Osborn, 11.
- Chama congregata Conrad, Glenn, 5.
- Chætopleura apiculata (Say) Martin, 3.
- Cheirotheroides E. Hitchcock, Lull, 1.
  - pilulatus E. Hitchcock, Lull, 1.
- Chelone sp., Case, 4.
- Chelonoides E. Hitchcock, Lull, 1.
  - incedens E. Hitchcock, Lull, 1.
- Chione alveata (Conrad), Glenn, 5.
  - latilirata (Conrad), Glenn, 5.
  - parkeria n. sp., Glenn, 5.
- Chondrites alpestris Heer, Ulrich, 1.
  - divaricatus Fischer-Ooster, Ulrich, 1.
- Chonetes cf. cornutus Hall, Kindle and Breger, 1.
  - coronatus Conrad, Raymond (P. E.), 1, 2.
  - mucronatus Hall, Raymond (P. E.), 1, 2.
  - robustus n. sp., Raymond (P. E.), 1, 2.
  - scitulus Hall, Raymond (P. E.), 1, 2.
- Chrysemys inornata n. sp., Loomis, 1.
  - wyomingensis Leidy, Hay, 1.
- Chrysodomus aphelus Dall, Rivers, 1.
  - arnoldi n. sp., Rivers, 1.
  - griseus Dall, Rivers, 1.
  - merriami n. sp., Rivers, 1.
  - patuxentensis n. sp., Martin, 3.
  - sp., Dall, 1.
- Cictyocha fibula (?) Ehrenberg, Martin, 6.
- Cinnamomum corrugatum n. sp., Perkins, 6.
  - lignitum n. sp., Perkins, 6.
  - novæ-angliæ Lx., Perkins, 6.
  - ovoides n. sp., Perkins, 6.
- Clathrodictyon problematicum n. sp., Parks, 1.
- Clavilithes chamberlaini n. sp., Johnson and Grabau, 1.
  - chamberlaini Johnson and Grabau, Grabau, 2.
  - humerosus (Conrad), Grabau, 2.
  - kennedyanus Harris, Grabau, 2.
  - pachyleurus (Conrad), Grabau, 2.
  - raphanoides (Conrad), Grabau, 2.
  - ? salebrosus (Conrad), Grabau, 2.
  - texanus Harris, Grabau, 2.
  - vicksburgensis (Conrad), Grabau, 2.
- Clavulites n. gen., Girty, 1.
  - howardensis n. sp., Girty, 1.
- Clementia inoceriformis (Wagner), Glenn, 5.
- Climacograptus Hall, Ruedemann, 1.
  - ? antennarius Hall sp., Ruedemann, 1.
  - pungens n. sp., Ruedemann, 1.
- Cliona alaskana Dall, Dall, 1.
- Cocculus minutus n. sp., Hollick, 2.
- Cochlespira Con., Casey, 1.
- Cochlespiropsis n. gen., Casey, 1.
  - blanda n. sp., Casey, 1.
  - engonata Con., Casey, 1.
- Cochliolepis striata Dall, Martin, 3.
- Cœlocystis Schuchert, Schuchert, 4.
  - subglobosus Hall, Schuchert, 4.

Paleontology—Continued.

Genera and species described—Continued.

- Coleolus tenuistriatus n. sp., Parks, 1.
  - sp., Parks, 1.
- Columbella calvertensis n. sp., Martin, 3.
  - (Astyris) communis (Conrad), Martin, 3.
- Comptichnus E. Hitchcock, Lull, 1.
  - obesus E. Hitchcock, Lull, 1.
- Conchidium laqueatum Conrad, Kindle and Breger, 1.
  - cf. littoni Hall, Kindle and Breger, 1.
  - cf. multicostatum Hall, Kindle and Breger, 1.
  - trilobatum n. sp., Kindle and Breger, 1.
  - unguiformis Ulrich (?), Kindle and Breger, 1.
- Conocardium multistriatum n. sp., Kindle and Breger, 1.
  - oweni n. sp., Kindle and Breger, 1.
- Constellaria florida var. emaciata n. var., Ulrich and Bassler, 2.
  - teres n. sp., Ulrich and Bassler, 2.
- Conus diluvianus Green, Martin, 3.
  - marylandicus Green, Martin, 3.
- Coralliophila cumberlandiana (Gabb), Martin, 3.
- Corbula cuneata Say, Glenn, 5.
  - elevata Conrad, Glenn, 5.
  - idonea Conrad, Glenn, 5.
  - inæqualis Say, Glenn, 5.
- Cordylocrinus ? dubius n. sp., Rowley, 1.
- Corvipes E. Hitchcock, Lull, 1.
  - lacertoideus E. Hitchcock, Lull, 1.
- Corylus harrimani n. sp., Knowlton, 1.
  - ? palachei n. sp., Knowlton, 1.
- Coryphodon testis (Cope), Osborn, 11.
- Coscinodiscus apiculatus Ehrenberg, Boyer, 1.
  - asteroides Truan and Witt, Boyer, 1.
  - heteroporus Ehrenberg, Boyer, 1.
  - lewisianus Greville, Boyer, 1.
  - lineatus Ehrenberg, Boyer, 1.
  - perforatus, Ehrenberg, Boyer, 1.
- Cosmacanthus elegans n. sp., Evans, 1.
- Cosoryx agilis n. sp., Douglass, 1.
- Crania crenistriata Hall, Raymond (P.E.), 1. 2.
  - sp., Kindle and Breger, 1.
- Craspedodiscus coscinodiscus Ehrenberg, Boyer, 1.
  - elegans Ehrenberg, Boyer, 1.
- Crassatellites (Crassinella) duplinianus Dall, Glenn, 5.
  - (Crassinella) galvestonensis (Harris), Glenn, 5.
  - marylandicus (Conrad), Glenn, 5.
  - melinus (Conrad), Glenn, 5.
  - turgidulus (Conrad), Glenn, 5.
- Crenella gubernatoria n. sp., Glenn, 5.
  - virida n. sp., Glenn, 5.
- Crepidula fornicata (Linné), Martin, 3.
  - plana Say, Martin, 3.
  - precursor n. sp., Dall, 1.
  - ungana n. sp., Dall, 1.
- Cricotillus brachydens, n. sp., Case, 1.
- Cricotus, Broili, 1.
- Crisina striatopora n. sp., Ulrich and Bassler, 4.
- Cristellaria Lamarck, Bagg, 3.

Paleontology—Continued.
Genera and species described—Continued.
Cristellaria cultrata (Montfort), Bagg, 3.
  wetherellii Jones, Bagg, 3.
Crocodilus prenasalis n. sp., Loomis, 1.
Crossotelos annulatus n. gen. and sp., Case, 1.
Crucibulum constrictum Conrad, Martin, 3.
  costatum (Say), Martin, 3.
  costatum var. pileolum (H. C. Lea), Martin, 3.
  multilineatum Conrad, Martin, 3.
Cryptozoon ? perkinsi n. sp., Seely, 2.
Cucumites lesquereuxii Kn., Perkins, 6.
Cumingia medialis Conrad, Glenn, 5.
Cunichnoides E. Hitchcock, Lull, 1.
  marsupialoideus E. Hitchcock, Lull, 1.
Cunninghamites elegans (Corda) Endl., Berry, 1.
  squamosus Heer, Berry, 1.
Cupressoxylon dawsoni Penh., Penhallow, 1.
  macrocarpoides n. sp., Penhallow, 1.
Cupularia denticulata (?) (Conrad), Ulrich and Bassler, 4.
Cyathaxonia venusta n. n., Greene, 3.
Cyathocrinus ? ovalis n. sp., Rowley, 1.
Cyclonema cancellata Hall, Kindle and Breger, 1.
  elevata Hall, Kindle and Breger, 1.
Cyclotrypa borealis n. sp., Parks, 1.
Cylichna calvertensis n. sp., Martin 3.
  ? greensboroensis n. sp., Martin, 3.
Cyphotrypa n. gen., Ulrich and Bassler, 2.
  acervulosa (Ulrich), Ulrich and Bassler, 2.
  frankfortensis n. sp., Ulrich and Bassler, 2.
  wilmingtonensis n. sp., Ulrich and Bassler, 2.
Cypricardinia sp., Kindle and Breger, 1.
Cypridina antiqua n. sp., Jones, 1.
Cyrtia myrtia Billings, Kindle and Breger, 1.
Cyrtina hamiltonensis Hall, Raymond (P. E), 1, 2.
Cystiphyllum clavatum n. sp., Greene, 1.
  conspicuum n. sp., Greene, 4.
  crenatum n. sp., Greene, 4.
  fulcratum n. sp., Greene, 1.
  gemmiferum n. sp. Greene, 4.
  vesiculosum Phillips, Greene, 4.
Cythere burnsi n. sp., Ulrich and Bassler, 3.
  calverti n. sp.,? Ulrich and Bassler, 3.
  clarkana n. sp., Ulrich and Bassler, 3.
  clarkana var. minuscula n. var., Ulrich and Bassler, 3.
  dorsicornis n. sp., Ulrich and Bassler, 3.
  dorsicornis var. bicornis n. var. Ulrich and Bassler, 3.
  evax n. sp., Ulrich and Bassler, 3.
  evax var. oblongula n. var., Ulrich and Bassler, 3.
  exanthemata n. sp., Ulrich and Bassler, 3.
  francisca n. sp., Ulrich and Bassler, 3.
  inæquivalvis n. sp., Ulrich and Bassler, 3.
  lienenklausi n. sp., Ulrich and Bassler, 3.
  martini n. sp., Ulrich and Bassler, 3.
  micula n. sp., Ulrich and Bassler, 3.
  nitidula n. sp., Ulrich and Bassler, 3.

Paleontology—Continued.
Genera and species described—Continued.
  Cythere nitidula var. calvertensis n. var., Ulrich and Bassler, 3.
  paucipunctata n. sp., Ulrich and Bassler, 3.
  planibasalis n. sp., Ulrich and Bassler, 3.
  plebeia n. sp., Ulrich and Bassler, 3.
  plebeia var. capax n. var., Ulrich and Bassler, 3.
  plebeia var. modica n. var., Ulrich and Bassler, 3.
  porcella n. sp., Ulrich and Bassler, 3.
  producta n. sp., Ulrich and Bassler, 3.
  punctistriata n. sp., Ulrich and Bassler, 3.
  rugipunctata n. sp., Ulrich and Bassler, 3.
  ?shattucki n. sp., Ulrich and Bassler, 3.
  spiniplicata n. sp., Ulrich and Bassler, 3.
  subovalis n. sp., Ulrich and Bassler, 3.
  tuomeyi n. sp., Ulrich and Bassler, 3.
  vaughani n. sp., Ulrich and Bassler, 3.
Cytherea (Antigona) staminea Conrad, Glenn, 5.
Cythereis alaris n. sp., Ulrich and Bassler, 3.
  cornuta var. americana n. var. Ulrich and Bassler, 3.
Cytheridea ? chesapeakensis n. sp., Ulrich and Bassler, 3.
  subovata n. sp., Ulrich and Bassler, 3.
Cytherideis ashermani n. sp., Ulrich and Bassler, 3.
  cylindrica n. sp., Ulrich and Bassler, 3.
  longula n. sp., Ulrich and Bassler, 3.
  semicircularis n. sp., Ulrich and Bassler, 3.
  subæqualis n. sp., Ulrich and Bassler, 3.
Cytheropteron nodosum n. sp., Ulrich and Bassler, 3.
Dalmanella elegantula Dalman, Kindle and Breger, 1.
Dalmanites lunatus n. sp., Lambert, 1.
  (Synphoria) vigilans Hall, Kindle and Breger, 1.
Dammara cliffwoodensis Hollick, Berry, 1.
  northportensis n. sp., Hollick, 2.
Daonella Mojsisovics, Smith (J. P.), 2.
  dubia Gabb, Smith (J. P.), 2.
Dawsonia Nicholson, Ruedemann, 1.
  monodon Gurley, Ruedemann, 1.
  tridens Gurley, Ruedemann, 1.
Dekayella Ulrich, Ulrich and Bassler, 2.
  foliacea n. sp., Ulrich and Bassler, 2.
Dekayia Edwards and Haime, Ulrich and Bassler, 2.
Delphinodon Leidy, Case, 4.
  leidyi (Hay), Case, 4.
  mento Cope, Case, 4.
Delthyris consobrinus d'Orbigny, Raymond (P. E.), 1, 2.
Dendrograptus Hall, Ruedemann, 1.
  flexuosus Hall, Ruedemann, 1.
  fluitans n. sp., Ruedemann, 1.
  ? succulentus n. sp., Ruedemann, 1.
Dentalium attenuatum Say, Martin, 3.
  caduloide Dall, Martin, 3.
  danai Meyer, Martin, 3.
  sp., Dall, 1.
Desmograptus Hopkinson, Ruedemann, 1.
  cancellatus Hopk. (sp.), Ruedemann, 1.

Paleontology—Continued.

Genera and species described—Continued.

- Desmograptus intricatus n. sp., Ruedemann, 1.
- Diacranodus texensis Cope, Broili, 2.
- Dichograptus Salter, Ruedemann, 1.
  - octobrachiatus Hall (sp.), Ruedemann, 1.
- Dictyocoryne profunda Ehrenberg, Martin, 6.
- Dictyonema Hall, Ruedemann, 1.
  - flabelliforme Eichwald (sp.), Ruedemann, 1.
  - furciferum n. sp., Ruedemann, 1.
  - murrayi Hall, Ruedemann, 1.
  - rectilineatum n. sp., Ruedemann, 1.
- Dictyoretmon n. gen., Whitfield, 1.
  - burlingtonense n. sp., Whitfield, 1.
- Didymograptus McCoy, Ruedemann, 1.
  - acutidens Lapworth ms., Elles and Wood em., Ruedemann, 1.
  - bifidus Hall sp., Ruedemann, 1.
  - (Isograptus) caduceus Salter em. Ruedemann, Ruedemann, 1.
  - caduceus Salter nanus n. mut., Ruedemann, 1.
  - cuspidatus n. sp., Ruedemann, 1.
  - ellesi n. sp., Ruedemann, 1.
  - extensus Hall sp., Ruedemann, 1.
  - gracilis Törnquist, Ruedemann, 1.
  - filiformis Tullberg, Ruedemann, 1.
  - forcipiformis n. sp., Ruedemann, 1.
  - incertus n. sp., Ruedemann, 1.
  - nanus Lapworth, Ruedemann, 1.
  - nicholsoni Lapworth var. planus Elles and Wood, Ruedemann, 1.
  - nitidus Hall sp., Ruedemann, 1.
  - patulus Hall sp., Ruedemann, 1.
  - similis Hall sp., Ruedemann, 1.
  - spinosus n. sp., Ruedemann, 1.
  - törnquisti n. sp., Ruedemann, 1.
- Distephanus crux (Ehrenberg), Martin, 6.
  - speculum (Ehrenberg), Martin, 6.
- Dimetrodon, Case, 2, 3.
  - gigas, Case, 2.
  - incisivus, Case, 2.
  - incisivus Cope, Broili, 1.
- Dinobolus conradi Hall, Kindle and Breger, 1
- Diphyphyllum dilatum n. sp., Greene, 4.
- Diplocaulus Cope, Broili, 1.
- Diplocaulus Cope, Case, 1.
  - copei n. sp., Broili, 1.
  - magnicornis Cope, Broili, 1.
  - pusillus n. sp., Broili, 1.
- Diplodocus longus, Osborn, 7.
- Diplodonta acclinis Conrad, Glenn, 5.
  - shilohensis Dall, Glenn, 5.
  - subvexa (Conrad), Glenn, 5.
  - sp., Dall, 1.
- Diplograptus McCoy, Ruedemann, 1.
  - dentatus Brongniart sp., Reudemann, 1.
  - inutilis Hall, Ruedemann, 1.
  - laxus n. sp., Ruedemann, 1.
  - longicaudatus n. sp., Ruedemann, 1.
- Diploneis microtatos var. christianii Cleve, Boyer, 1.
- Dipoides Jäger, Matthew and Gidley, 1.
  - tortus (Leidy), Matthew and Gidley, 1.
- Discinisca lugubris (Conrad), Martin, 4.
- Discorbina Parker and Jones, Bagg, 3.

Paleontology—Continued.

Genera and species described—Continued.

- Discorbina orbicularis (Terquem), Bagg, 3.
- Dissacus saurognathus Wortman, Osborn, 11.
- Divaricella quadrisulcata (d'Orbigny), Glenn, 5.
- Dolatocrinus Lyon, Wood (Elvira), 1.
  - asterias n. sp., Wood (Elvira), 1.
  - charlestownensis Miller and Gurley, Wood (Elvira), 1.
  - costatus n. sp., Wood (Elvira), 1.
  - excavatus W. and Sp., Rowley, Greene, 3.
  - excavatus Wachsmuth and Springer, Wood (Elvira), 1.
  - greenei Miller and Gurley, Wood (Elvira), 1.
  - hammelli Miller and Gurley, Wood (Elvira), 1.
  - major Wachsmuth and Springer, Wood (Elvira), 1.
  - ornatus Meek, Wood (Elvira), 1.
  - salebrosus Miller and Gurley, Wood (Elvira), 1.
  - triadactylus Barris, Wood (Elvira), 1.
  - sp., Wood (Elvira), 1.
  - wachsmuthi n. nom., Wood (Elvira), 1.
- Dolichobrachium gracile n. gen. and sp., Williston, 5.
- Dosinia acetabulum Conrad, Glenn, 5.
  - ? alaskana n. sp., Dall, 1.
- Drillia calvertensis n. sp., Martin, 3.
  - incilifera (Conrad), Martin, 3.
  - incilifera var. angulata n. var., Martin, 3.
  - incilifera var. distans (Conrad), Martin, 3.
  - limatula Conrad, Martin, 3.
  - limatula var. dissimilis Conrad, Martin, 3.
  - limatula var. pyramidalis n. var., Martin, 3.
  - pseudeburnea (Whitfield), Martin, 3.
  - whitfieldi n. sp., Martin, 3.
- Dromopus agilis Marsh, Matthew (G. F.), 1.
- Drupa rhabdosperma Lx., Perkins, 6.
- Dryptosaurus incrassatus (Cope), Lambe, 1.
- Eatonia goodlandensis n. sp., Kindle and Breger, 1.
- Echinocardium orthonotum Conrad, Clark, 3.
- Ecphora Conrad, Martin, 3.
  - quadricostata (Say), Martin, 3.
  - quadricostata var. umbilicata (Wagner), Martin, 3.
  - tampaensis (Dall), Martin, 3.
  - tricostata n. sp., Martin, 3.
- Edestus, Eastman, 1.
- Emarginula marylandica n. sp., Martin, 3.
- Embolophorus (?) Cope, Case, 1.
  - dollovianus Cope, em. Case, Broili, 1.
- Encrinurus indianensis n. sp., Kindle and Breger, 1.
- Engonoceras Neumayr, Lasswitz, 1.
  - ambiguum Hyatt, Lasswitz, 1.
  - dumbli Cragin sp., em. Lasswitz, Lasswitz, 1.
  - G. Stolleyi Boehm, em. Lasswitz, Lasswitz, 1.
  - hilli Boehm, em. Lasswitz, Lasswitz, 1.
- Ensis directus (Conrad), Glenn, 5.
  - ensiformis Conrad, Glenn, 5.

Paleontology—Continued.
Genera and species described—Continued.
Eocidaris Desor, Klem, 1.
blairi Miller, Klem, 1.
hallianus Geinitz, Klem, 1.
Eoclathurella n. gen., Casey, 1.
jacksonica n. sp., Casey, 1.
obesula n. sp., Casey, 1.
Eodrillia n. gen., Casey, 1.
Eosurcula n. gen., Casey, 1.
concinna n. sp., Casey, 1.
helicoidea n. sp., Casey, 1.
moorei Gabb, Casey, 1.
pulcherrima Heilp., Casey, 1.
tuomeyi Ald., Casey, 1.
Erato perexigua (Conrad), Martin, 3.
Erethizon godfreyi n. sp., Allen, 1.
Ervilia planata Dall, Glenn, 5.
Erycina (Pseudopythina?) americana Dall, Glenn, 5.
calvertensis n. sp., Glenn, 5.
marylandica n. sp., Glenn, 5.
pruna n. sp., Glenn, 5.
rickardia n. sp., Glenn, 5.
speciosa n. sp., Glenn, 5.
Eryops megacephalus Cope, Case, 1.
Etagraptus n. subg., Ruedemann, 1.
Etoblattina coriacea n. sp., Sellards, 1.
hilliana?, Sellards, 1.
juvenis n. sp., Sellards, 1.
mazona, Sellards, 1.
Eubrachiosaurus browni n. gen. and sp., Williston, 5.
Eubrontes E. Hitchcock, Lull, 1.
approximatus (C. H. Hitchcock), Lull, 1.
divaricatus (E. Hitchcock), Lull, 1.
giganteus E. Hitchcock, Lull, 1.
platypus nom. nov., Lull, 1.
Eucalyptus ? angustifolia Newb., Hollick, 2.
geinitzi Heer, Berry, 1.
Euceratherium n. gen., Sinclair and Furlong, 1.
collinum n. sp., Sinclair and Furlong, 1.
Euchilodon Gabb, Casey, 1.
crenocarinatum Heilp., Casey, 1.
gabbianum n. sp., Casey, 1.
reticulatum Gabb, Casey. 1.
Euconulus turbinatus n. sp., Gulick, 1.
Eucyrtidium calvertense n. sp., Martin, 6.
Eulima eborea Conrad, Martin, 3.
lævigata (H. C. Lea), Martin, 3.
migrans Conrad, Martin, 3.
raymondi n. sp., Rivers, 1.
Eulimella (Anisocycla) marylandica n. sp., Martin, 3.
Eunella lincklaeni Hall, Raymond (P. E.), 1, 2.
Euomphalus alatus var., Kindle and Breger, 1.
alatus var. americanus n. var., Kindle and Breger, 1.
alatus var. limatoidea n. var., Kindle and Breger, 1.
Eupalamopus Hay, Lull, 1.
dananus (E. Hitchcock), Lull, 1.
Eupodiscus inconspicuus Rattray, Boyer, 1.
Euprotogonia puercensis (Cope), Marsh, 11.

Paleontology—Continued.
Genera and species described—Continued.
Euryacodon lepidus Marsh, Wortman, 1.
Eusyodon maximus Leidy, Osborn, 9.
Eutomoceras Hyatt, Smith (J. P.), 2.
dunni n. sp., Smith (J. P.), 2.
sandlingense Hauer, Smith (J. P.), 2.
Exocampe E. Hitchcock, Lull, 1.
arcta E. Hitchcock, Lull, 1.
minima E. Hitchcock, Lull, 1.
ornata E. Hitchcock, Lull, 1.
Falsifusus n. gen., Grabau, 2.
? apicalis (Johnson), Grabau, 2.
? houstonensis (Johnson), Grabau, 2.
ludovicianus (Johnson), Grabau, 2.
meyeri (Aldrich), Grabau, 2.
Favosites clausus Rominger, Greene, 1.
gibsoni n. sp., Parks, 1.
louisvillensis n. sp., Greene, 3.
Fenestella, Cumings, 1.
Flemingites Waagen, Smith (J. P.), 2.
russelli Hyatt & Smith, Smith (J. P.), 2.
Ficus atavina Heer, Berry, 1.
protæoides Lesq., Hollick, 6.
sapindifolia n. sp., Hollick, 2.
Fissuridea alticosta (Conrad), Martin, 3.
griscomi (Conrad), Martin, 3.
marylandica (Conrad), Martin, 3.
nassula (Conrad), Martin, 3.
redimicula (Say), Martin, 3.
Fossarus (Isapis) dalli (Whitfield), Martin, 3.
Frenelopsis hoheneggeri (Ett.) Schenk., Berry, 1.
Fulgur alveatum (Conrad), Martin, 3.
coronatum Conrad, Martin, 3.
coronatum var. rugosum Conrad, Martin, 3.
fusiforme Conrad, Martin, 3.
spiniger (Conrad) var., Martin, 3.
tuberculatum Conrad, Martin, 3.
Fulgurofusus n. gen., Grabau, 2.
quercollis (Harris), Grabau, 2.
rugatus (Aldrich), Grabau, 2.
Fulicopus E. Hitchcock, Lull, 1.
lyellianus E. Hitchcock, Lull, 1.
Fusitoma n. gen., Casey, 1.
Fusulina cylindrica, Smith (A. J.), 1.
Fusus Bruguiere, Grabau, 2.
gabbi n. sp., Grabau, 2.
haitensis Sowerby, Grabau, 2.
henekeni Sowerby, Grabau, 2.
Galeocerdo aduncus Agassiz, Eastman, 6.
contortus Gibbes, Eastman, 6.
latidens Agassiz, Eastman, 6.
triqueter n. sp., Eastman, 6.
Geinitzia formosa Heer, Berry, 1.
Gemmula Weink., Casey, 1.
alternata Con., Casey, 1.
amica Casey, Casey, 1.
ancilla Casey, Casey, 1.
childreni Lea, Casey, 1.
conjuncta n. sp., Casey, 1.
genitiva n. sp., Casey, 1.
lancea n. sp., Casey, 1.
ludoviciana Vgn., Casey, 1.
margaritosa n. sp., Casey, 1.
nodulina n. sp., Casey, 1.

Paleontology—Continued.

Genera and species described—Continued.

- Gemmula nucleata n. sp., Casey, 1.
  - obsolescens n. sp., Casey, 1.
  - parvidens n. sp., Casey, 1.
  - rotædens Con., Casey, 1.
  - tenella Con., Casey, 1.
- Gennæocrinus kentuckiensis (Shumard), Wood (Elvira), 1.
  - simulans n. sp., Rowley, Greene, 2.
- Genota riversiana n. sp., Raymond (W. J.), 1.
- Gerablattina arcuata n. sp., Sellards, 1.
- Gigandipus E. Hitchcock, Lull, 1.
  - caudatus E. Hitchcock, Lull, 1.
- Gilbertina n. gen., Ulrich, 1.
  - spiralis n. sp., Ulrich, 1.
- Gissocrinus? problematicus n. sp., Rowley, 1.
- Gleichenia zippei (Corda) Heer, Berry, 1.
- Globigerina d'Orbigny, Bagg, 3.
  - bulloides d'Orbigny, Bagg, 3.
  - cretacea d'Orbigny, Bagg, 3.
- Glossograptus Emmons, Ruedemann, 1.
  - echinatus n. sp., Ruedemann, 1.
  - hystrix n. sp., Ruedemann, 1.
- Glycemeris parilis (Conrad), Glenn, 5.
  - subovata (Say), Glenn, 5.
  - sp., Dall, 1.
- Glyptocrinus insperatus n. sp., Rowley, 1.
  - insperatus? var. carinatus n. var., Rowley, 1.
  - insperatus var. pentagonus n. var., Rowley, 1.
- Glyptotoma n. gen., Casey, 1.
  - conradiana Ald., Casey, 1.
  - crassiplicata Gabb, Casey, 1.
  - parvula n. sp., Casey, 1,
- Gomphoceras wabashensis Newell, Kindle and Breger, 1.
- Gomphotherium serus n. sp., Douglass, 1.
- Goniobasis marylandica n. sp., Martin, 3.
- Goniograptus McCoy, Ruedemann, 1.
  - geometricus n. sp., Ruedemann, 1.
  - perflexilis n. sp., Ruedemann, 1.
  - thureaui McCoy, Ruedemann, 1.
- Goniophora sp. indet., Parks, 1.
- Grallator E. Hitchcock, Lull, 1.
  - cuneatus E. Hitchcock, Lull, 1.
  - cursorius E. Hitchcock, Lull, 1.
  - formosus E. Hitchcock, Lull, 1.
  - gracilis C. H. Hitchcock, Lull, 1.
  - tenuis E. Hitchcock, Lull, 1.
- Graya argonauta Grove and Brun, Boyer, 1.
- Gymnotoceras Hyatt, Smith (J. P.), 2.
- Gypidula (Sieberella) galeatus Dalman, Kindle and Breger, 1.
  - (Sieberella) nucleus Hall and Whitfield, Kindle and Breger, 1.
- Gyrodendron n. gen., Ulrich, 1.
  - emersoni n. sp., Ulrich, 1.
- Gyronites Waagen, Smith (J. P.), 2.
- Hadrianus majusculus n. sp., Hay, 1.
- Haimeophyllum ordinatum Billings, Greene, 4.
- Hallicystis Jaekel, Schuchert, 4.
  - elongata Jaekel, Schuchert, 4.
  - imago (Hall), Schuchert, 4.
- Halobia Bronn, Smith (J. P.), 2.

Paleontology—Continued.

Genera and species described—Continued.

- Halobia superba Mojsisovics, Smith (J. P.), 2.
- Haplocanthosaurus Hatcher, Riggs, 2.
- Harpedactylus E. Hitchcock, Lull, 1.
  - crassus E. Hitchcock, Lull, 1.
  - gracilior E. Hitchcock, Lull, 1.
  - tenuissimus E. Hitchcock, Lull, 1.
- Heilprinia n. gen., Grabau, 2.
  - æqualis (Emmons), Grabau, 2.
  - barbarensis (Trask), Grabau, 2.
  - burnsii (Dall), Grabau, 2.
  - caloosaensis (Heilprin), Grabau, 2.
  - caloosaensis var. carolinensis (Dall), Grabau, 2.
  - exilis (Conrad), Grabau, 2.
  - robusta (Trask), Grabau, 2.
- Helcura E. Hitchcock, Lull, 1.
  - anguinea E. Hitchcock, Lull, 1.
  - littoralis E. Hitchcock, Lull, 1.
  - surgens E. Hitchcock, Lull, 1.
- Helicina occulta Say, Shimek, 2.
- Helicoprion, Eastman, 1.
- Heliophyllum conditum n. sp., Greene, 4.
  - gradatum n. sp., Greene, 3.
  - inflexum n. sp., Greene, 4.
  - obliquum n. sp., Greene, 4.
  - parvulum n. sp., Greene, 2.
  - sulcatum, Greene, 3.
- Helminthoida Schafhäutl, Ulrich, 1.
  - abnormis n. sp., Ulrich, 1.
  - exacta n. sp., Ulrich, 1.
  - subcrassa n. sp., Ulrich, 1.
  - vaga n. sp., Ulrich, 1.
- Helminthopsis? labyrinthica Heer, Ulrich, 1.
  - magna Heer, Ulrich, 1.
- Hemiacodon gracilis Marsh, Wortman, 1.
  - pygmæus n. sp., Wortman, 1.
- Hemiaster vancouverensis n. sp., Whiteaves, 3.
- Hemipristis serra Agassiz, Eastman, 6.
- Hemisurcula n. gen., Casey, 1.
- Hercoceras auriculum n. sp., Parks, 1.
- Heteronema n. gen., Ulrich and Bassler, 1.
  - ? carbonarium n. sp., Ulrich and Bassler, 1.
  - ? contextum n. sp., Ulrich and Bassler, 1.
- Heterotrypa Nicholson, Ulrich and Bassler, 2.
  - parvulipora n. sp., Ulrich and Bassler, 2.
- Hexalonche miscrosphæra Vinassa, Martin, 6.
- Hexameroceras delphicolum Newell, Kindle and Breger, 1.
- Hexastylus simplex Vinassa, Martin, 6.
- Hicoria biacuminata n. sp., Perkins, 6.
  - magnifica n. sp., Knowlton, 1.
- Hicoroides n. gen., Perkins, 6.
  - angulata n. sp., Perkins, 6.
  - ellipsoidea n. sp., Perkins, 6.
  - globulus n. sp., Perkins, 6.
  - parva n. sp., Perkins, 6.
  - triangularis n. sp., Perkins, 6.
- Hindsiella acuta Dall, Glenn, 5.
- Hipparion Christol, Gidley, 1.
- Holopea sp., Parks, 1.
- Homotrypella nodosa n. sp., Ulrich and Bassler, 2.
- Hoplichnus E. Hitchcock, Lull, 1.
  - quadrupedans E. Hitchcock, Lull, 1.
- Hyalaea tricuspida n. sp., Rivers, 1.

Paleontology—Continued.
Genera and species described—Continued.
Hydractinia multispinosa n. sp., Ulrich, 3.
Hylopus Dawson, Matthew, 4.
caudifer Dawson, Matthew, 1.
hardingi Dawson, Matthew, 1, 4.
Hyphepus E. Hitchcock, Lull, 1.
fieldi E. Hitchcock, Lull, 1.
Hypocetus Lydekker, Case, 4.
mediatlanticus (Cope), Case 4.
Hypohippus Leidy, Gidley, 1.
Idmonea ? expansa n. sp., Ulrich and Bassler, 4.
Illænus armatus Hall, Kindle and Breger, 1.
insignis Hall, Kindle and Breger, 1.
ioxus Hall, Kindle and Breger, 1.
Illicium lignitum Lx., Perkins, 6.
Ilyanassa? (Paranassa) porcina (Say), Martin, 3.
Inoceramya n. gen., Ulrich, 1.
concentrica n. sp., Ulrich, 1.
Ischyrocyon n. gen., Matthew, Matthew and Gidley, 1.
hyænodus n. sp., Matthew, Matthew and Gidley, 1.
Isocampe E. Hitchcock, Lull, 1.
strata E. Hitchcock, Lull, 1.
Isocardia fraterna Say, Glenn, 5.
ignolea n. sp., Glenn, 5.
markoei Conrad, Glenn, 5.
mazlea n. sp., Glenn, 5.
Ixacanthus Cope, Case, 4.
atropius Cope, Case, 4.
cœlospondylus Cope, Case, 4.
conradi (Leidy), Case, 4.
spinosus Cope, Case, 4.
stenus Cope, Case, 4.
Jaekelocystis Schuchert, 4.
avellana n. sp., Schuchert, 4.
hartleyi Schuchert, Schuchert, 4.
papillatus n, sp., Schuchert, 4.
Juglans brandonianus n. sp., Perkins, 6.
Kellia rotundula n. sp., Glenn, 5.
Koninckites Waagen, Smith (J. P.), 2.
Labidosaurus hamatus Cope, Broili, 1.
Labiosa (Raeta) sp., Glenn, 5.
Lagunculapes E. Hitchcock, Lull, 1.
latus E. Hitchcock, Lull, 1.
Lampterocrinus? comptus n. sp., Rowley, 1.
Laurus angusta Heer, Hollick, 2.
hollickii Berry, Berry, 1.
plutonia Heer, Berry, 1.
proteæfolia Lesq., Berry, 1.
Lecanocrinus hemisphericus n. sp., Rowley, 1.
Leda concentrica (Say), Glenn, 5.
liciata (Conrad), Glenn, 5.
liciata var. amydra Dall, Glenn, 5.
sp., Dall, 1.
Lepidechinus Hall, Klem, 1.
imbricatus Hall, Klem, 1.
rarispinus Hall, Klem, 1.
Lepidesthes Meek and Worthen, Klem, 1.
colletti White, Klem, 1.
coreyi Meek and Worthen, Klem, 1.
formosus Miller, Klem, 1.
spectabilis Worthen and Miller, Klem, 1.
wortheni Jackson, Klem, 1.

Paleontology—Continued.
Genera and species described—Continued.
Lepidocidaris Meek and Worthen, Klem, 1.
squamosus Meek and Worthen, Klem, 1.
Lepidodendron keyesi n. sp., Herrick (C. L.), 1.
socorroense n. sp., Herrick (C. L.), 1.
thwaitesi n. sp., Herrick (C. L.), 1.
thwaitesi var. striolatum n. var., Herrick (C. L.), 1.
sp.?, Herrick (C. L.), 1.
Lepocrinites Conrad, Schuchert, 4.
gebhardii Conrad, Schuchert, 4.
manlius n. sp., Schuchert, 4.
Lepralia maculata n. sp., Ulrich and Bassler, 4.
marylandica n. sp., Ulrich and Bassler, 4.
montifera n. sp., Ulrich and Bassler, 4.
? reversa n. sp., Ulrich and Bassler, 4.
Leptæna rhomboidalis Wilckens, Kindle and Breger, 1.
Leptosurcula n. gen., Casey, 1.
Leptotrypa Ulrich, Ulrich and Bassler, 2.
Lima papyria (Conrad), Glenn, 5.
Limipecten n. gen., Girty, 1.
texanus n. sp., Girty, 1.
texanus var. grandicostatus n. var., Girty, 1.
Limnopus vagans Marsh, Matthew, 1.
Linearia ? divaricata n. sp., Johnson, 1.
Lioclema Ulrich, Ulrich and Bassler, 2.
monroei n. sp., Ulrich and Bassler, 2.
punctatum (Hall), Ulrich and Bassler, 2.
Lioclemella Foerste, Ulrich and Bassler, 2.
ohioensis (Foerste), Ulrich and Bassler, 2.
Liriodendropsis angustifolia Newb., Berry, 1.
Lirosoma sulcosa Conrad, Martin, 3.
Lithasteriscus radiatus Ehrenberg, Martin, 6.
Lithocampe marylandica n. sp., Martin, 6.
Lithodrumus n. gen., Greene, 1.
veryi n. sp., Greene, 1,
Lithophaga ionensis n. sp., Glenn, 5.
subalveata Conrad, Glenn, 5.
Littorina irrorata (Say), Martin, 3.
Lituites (Ophidioceras) bickmoreanus Whitfield, Kindle and Breger, 1.
(Ophidioceras) hercules carrollensis n. var., Kindle and Breger, 1.
marshii Hall, Kindle and Breger, 1.
Loganograptus Hall, Ruedemann, 1.
logani Hall, Ruedemann, 1.
Lophocetus Cope, Case, 4.
calvertensis (Harlan), Case, 4.
Loxonema robusta Hall, Parks, 1.
Lutra pristina n. sp., Matthew, Matthew and Gidley, 1.
Lyrosurcula n. gen., Casey, 1.
acuta n. sp., Casey, 1.
elegans n. sp., Casey, 1.
obsoleta n. sp., Casey, 1.
Lysorophus tricarinatus Cope, Broili, 1.
Lytoloma Cope, Wieland, 2.
angusta Cope, Wieland, 2.
(Euclastes) platyops Cope, Wieland, 2.
Macoma lenis (Conrad), Glenn, 5.
marylandica n. sp., Glenn, 5.
Macrocallista (Chionella?) gilberti n. sp., Dall, 1.

Paleontology—Continued.

- *Genera and species described*—Continued.
  - Macrocallista marylandica (Conrad), Glenn, 5.
    - (Chionella) sp., Dall, 1.
  - Mactra clathrodon Lea, Glenn, 5.
  - Magnolia capellinii Heer, Berry, 1.
    - capellini Heer, Hollick, 2.
    - speciosa Heer, Berry, 1.
    - tenuifolia Lesq., Berry, 1.
    - tenuifolia Lesq. (?), Hollick, 2.
  - Mangilia cornelliana n. sp., Martin, 3.
    - (Glyphostoma) obtusa n. sp., Martin, 3.
    - parva (Conrad), Martin, 3.
    - parvoidea n. sp., Martin, 3.
    - patuxentia n. sp., Martin, 3.
  - Margaritaria abrupta (Conrad) Glenn, 5.
  - Margarites peninsularis n. sp., Dall, 1.
  - Marginella calvertensis n. sp., Martin, 3.
    - denticulata Conrad, Martin, 3.
    - minuta Pfeiffer, Martin, 3.
  - Marsilea andersoni n. sp., Hollick, 2.
  - Martesia ovalis (Say), Glenn, 5.
  - Meekoceras Hyatt, Smith (J. P.), 2.
    - (Gyronites) aplanatum White, Smith (J. P.), 2.
    - gracilitatis White, Smith (J. P.), 2.
    - (Koninckites) mushbachanum White, Smith (J. P.), 2.
  - Megistocrinus abnormis (Lyon), Wood (Elvira), 1.
    - circulus? Rowley, Greene, 2.
    - depressus (Hall), Wood (Elvira), 1
    - expansus Miller and Gurley, Wood (Elvira), 1.
    - regularis n. sp., Wood (Elvira), 1.
    - nodosus Barris?, Wood (Elvira), 1.
    - rugosus Lyon and Casseday, Wood (Elvira), 1.
    - spinosulus Lyon, Rowley, Greene, 2.
    - sphæralis n. sp., Wood (Elvira), 1.
    - tuberatus n. sp., Wood (Elvira), 1.
  - Melina maxillata (Deshayes) Glenn, 5.
  - Melocrinus wittenbergensis n. sp., Rowley, 1.
  - Melonites Owen and Norwood, Klem, 1.
    - crassus Hambach, Klem, 1.
    - irregularis Hambach, Klem, 1.
    - multiporus Norwood and Owen, Klem, 1.
    - septenarius Jackson, Klem, 1.
  - Membranipora bifoliata n. sp., Ulrich and Bassler, 4.
    - caminosa n. sp., Ulrich and Bassler, 4.
    - fistula n. sp., Ulrich and Bassler, 4.
    - fossulifera n. sp., Ulrich and Bassler, 4.
    - germana n. sp., Ulrich and Bassler, 4.
    - nitidula n. sp., Ulrich and Bassler, 4.
    - oblongula n. sp., Ulrich and Bassler, 4.
    - parva n. sp., Ulrich and Bassler, 4.
  - Meniscomys sp. indet., Matthew, Matthew and Gidley, 1.
  - Meristina maria Hall, Kindle and Breger, 1.
    - cf. princeps Hall, Kindle and Breger, 1.
    - rectirostris Hall, Kindle and Breger, 1.
  - Merychippus Leidy, Gidley, 1.
  - Merycodus Leidy, Matthew (W. D.), 1.
    - agilis Douglass, Matthew (W. D.), 1.
    - furcatus (Leidy), Matthew (W. D.), 1.

Paleontology—Continued.

- *Genera and species described*—Continued.
  - Merycodus necatus Leidy, Matthew (W. D.), 1.
    - osborni n. sp., Matthew (W. D.), 1.
    - ? ramosus Cope, Matthew (W. D.), 1.
  - Mesodesma mariana n. sp., Glenn, 5.
  - Mesohippus brachystylus n. sp., Osborn, 6.
    - bairdi Leidy, Osborn, 6.
    - celer Marsh, Osborn, 6.
    - copei Osborn and Wortman, Osborn, 6.
    - eulophus n. sp., Osborn, 6.
    - hypostylus n. sp., Osborn, 6.
    - intermedius Osborn and Wortman, Osborn, 6.
    - latidens Douglass, Osborn, 6.
    - meteulophus n. sp., Osborn, 6.
    - montanensis n. sp., Osborn, 6.
    - obliquidens n. sp., Osborn, 6.
    - proteulophus n. sp., Osborn, 6.
    - validus n. sp., Osborn, 6.
    - westoni Cope, Osborn, 6.
  - Mesodesma alaskensis n. sp., Dall, 1.
  - Mesotrypa angularis n. sp., Ulrich and Bassler, 2.
    - echinata n. sp., Ulrich and Bassler, 2.
  - Metacheiromys Wortman, Osborn, 5.
    - dasypus n. sp., Osborn, 5.
    - tatusia n. sp., Osborn, 5.
  - Metis biplicata Conrad, Glenn, 5.
  - Metopocetus Cope, Case, 4.
    - durinasus Cope, Case, 4.
  - Metoposaurus fraasi n. sp., Lucas, 1.
  - Microporella ? bifoliata n. sp., Ulrich and Bassler, 4.
    - inflata n. sp., Ulrich and Bassler, 4.
    - præciliata n. sp., Ulrich and Bassler, 4.
  - Microsurcula n. gen., Casey, 1.
    - bellula n. sp., Casey, 1.
    - nucleola n. sp., Casey, 1.
  - Miliolina Williamson, Bagg, 3.
    - seminulum (Linné), Bagg, 3.
  - Milleaster n. gen., Ulrich, 3.
    - incrustans n. sp., Ulrich, 3.
    - ? subramosus n. sp., Ulrich, 3.
  - Miohippus crassicuspis n. sp., Osborn, 6.
    - gidleyi n. sp., Osborn, 6.
  - Miolabis, Matthew (W. D.), 2.
    - (Paratylopus) cameloides, Matthew (W. D.), 2.
    - (Paratylopus) primævus n. subg. and sp., Matthew (W. D.), 2.
    - (Paratylopus) sternbergi, Matthew (W. D.), 2.
    - transmontanus, Matthew (W. D.), 2.
  - Mitra mariana n. sp., Martin, 3.
  - Modiolaria curta n. sp., Glenn, 5.
  - Modiolus alaskanus n. sp., Dall, 1.
    - dalli n. sp., Glenn, 5.
    - ducatelii Conrad, Glenn, 5.
    - harrimani n. sp., Dall, 1.
    - ionensis n. sp., Glenn, 5.
    - virginicus (Conrad), Glenn, 5.
    - sp., Dall, 1.
    - (Botula ?) sp., Dall, 1.
  - Molleria minuscula Dall, Martin, 3.
  - Monocarpellites n. gen., Perkins, 6.

Paleontology—Continued.
Genera and species described—Continued.
Monocarpellites elegans n. sp., Perkins, 6.
  gibbosus n. sp., Perkins, 6.
  hitchcockii n. sp., Perkins, 6.
  irregularis n. sp., Perkins, 6.
  medius, n. sp., Perkins, 6.
  orbicularis n. sp., Perkins, 6.
  ovalis n. sp., Perkins, 6.
  pyramidalis n. sp., Perkins, 6.
  sulcatus n. sp., Perkins, 6.
  vermontanus n. sp., Perkins, 6.
  whitfieldii n. sp., Perkins, 6.
Monoclonius canadensis Lambe, Lambe, 3, 4.
Monomorella sp., Kindle and Breger, 1.
Monotrypella Ulrich, Ulrich and Bassler, 2.
  æqualis Ulrich, Ulrich and Bassler, 2.
Montacuta mariana Dall, Glenn, 5.
Monticulipora D'Orbigny, Ulrich and Bassler, 2.
  cleavelandi James, Ulrich and Bassler, 2.
  epidermata n. sp., Ulrich and Bassler, 2.
Morosaurus sp., Osborn, 7.
Murchisonia (Coelacaulis) bivittata Hall, Kindle and Breger, 1.
  desiderata Hall, Parks, 1.
  (Turritoma) laphami Hall, Kindle and Breger, 1.
  sp. undet., Kindle and Breger, 1.
Murex (Pterorhytis) conradi Dall, Martin, 3.
Muricidea shilohensis (Heilprin), Martin, 3.
Mya crassa Grewingk, Dall, 1.
  producta Conrad, Glenn, 5.
Mylacris anceps n. sp., Sellards, 1.
  diplodiscus, Sellards, 1.
  elongata, Sellards, 1.
Myelophycus n. gen., Ulrich, 1.
  curvatum n. sp., Ulrich, 1.
Myliobatis Cuvier, Eastman, 6.
  frangens n. sp., Eastman, 6.
  gigas, Eastman, 6.
  pachyodon, Eastman, 6.
Mylohyus Cope, Matthew and Gidley, 1.
Myrica cliffwoodensis n. sp., Berry, 1.
Mytilus conradinus d'Orbigny, Glenn, 5.
  (Mytiloconcha) incurvus Conrad, Glenn, 5.
  middendorffi Grewingk, Dall, 1.
Nanopus caudatus Marsh, Matthew, 1.
Nassa calvertensis n. sp., Martin, 3.
  greenboroensis n. sp., Martin, 3.
  gubernatoria n. sp., Martin, 3.
  marylandica n. sp., Martin, 3.
  peralta (Conrad), Martin, 3.
  peraltoides n. sp., Martin, 3.
  trivittata Say, Martin, 3.
  trivittatoides (Whitfield), Martin, 3.
Nautilus ? sp., Martin, 3.
Necrolemur, Wortman, 1.
Nelumbo kempii (Hollick), Hollick, 2.
Nileus vigilans Meek and Worthen, Finch (G. E.), 1.
Niso lineata Conrad, Martin, 3.
Nonionina d'Orbigny, Bagg, 3.
  scapha (Fichtel and Moll), Bagg, 3.
Notidanus primigenius Agassiz, Eastman, 6.
Notolacerta missouriensis Butts, Matthew, 1.

Paleontology—Continued.
Genera and species described—Continued.
Nucleocrinus angularis Lyon, Rowley, Greene, 3.
  imitator Rowley, Rowley, Greene, 3.
  lucina Hall, Rowley, Greene, 3.
Nucleospira pisiformis Hall, Kindle and Breger, 1.
Nucula (Acila) decisa Conrad, Dall, 1.
  proxima Say, Glenn, 5.
  prunicola Dall, Glenn, 5.
  sinaria Dall, Glenn, 5.
  taphria Dall, Glenn, 5.
Nyssa Gron., Perkins, 6.
  ascoidea n. sp., Perkins, 6.
  clarkii n. sp., Perkins, 6.
  complanata Lx., Perkins, 6.
  crassicostata n. sp., Perkins, 6.
  curta n. sp., Perkins, 6.
  cylindrica n. sp., Perkins, 6.
  elongata n. sp., Perkins, 6.
  equicostata n. sp., Perkins, 6.
  excavata n. sp., Perkins, 6.
  jonesii n. sp., Perkins, 6.
  lævigata Lx., Perkins, 6.
  lamellosa n. sp., Perkins, 6.
  lescurii C. H. Hitchcock, Perkins, 6.
  microcarpa Lx., Perkins, 6.
  multicostata n. sp., Perkins, 6.
  ovata n. sp., Perkins, 6.
  solea n. sp., Perkins, 6.
Odontaspis cuspidata (Agassiz), Eastman, 6.
  elegans (Agassiz), Eastman, 6.
Odontopleura ortoni Foerste, Kindle and Breger, 1.
Odostomia (Pyrgulina) calvertensis n. sp., Martin, 3.
  conoidea (Brocchi), Martin, 3.
  (Evalea) mariana n. sp., Martin, 3.
  (Syrnola) marylandica n. sp., Martin, 3.
  (Chrysallida) melanoides (Conrad), Martin, 3.
Oligoporus Meek and Worthen, Klem, 1.
  coreyi Meek and Worthen, Klem, 1.
  danæ Meek and Worthen, Klem, 1.
  missouriensis Jackson, Klem, 1.
  mutatus Keyes, Klem, 1.
  nobilis Meek and Worthen, Klem, 1.
  parvus Hambach, Klem, 1.
Oliva harrisi n. sp., Martin, 3.
  litterata Lamarck, Martin, 3.
Omomys ameghini n. sp., Wortman, 1.
  pucillus Marsh, Wortman, 1.
Onchosaurus Gervais, Eastman, 2.
Ophioderma ? sp., Clark, 3.
Orbignella n. gen., Ulrich and Bassler, 2.
  sublamellosa n. sp., Ulrich and Bassler, 2.
Oriostoma huntingtonensis n. sp., Kindle and Breger, 1.
  huntingtonensis var. alternatum n. var., Kindle and Breger, 1.
  ? opercula, Kindle and Breger, 1.
  plana n. sp., Kindle and Breger, 1.
  sp. undet., Kindle and Breger, 1.
Ornithichnites gallinuloides King, Matthew, 1.
Ornitholestes hermanni Osborn, Lambe, 2.
Ornithomimus altus Lambe, Lambe, 2.

Paleontology—Continued.

- *Genera and species described*—Continued.
  - Ornithomimus sedens Marsh, Lambe, 2.
  - Orthis flabellites Foerste, Kindle and Breger, 1.
    - ? subnodosa Hall, Kindle and Breger, 1.
  - Orthoceras algomense n. sp., Parks, 1.
    - (Kionoceras) angulatum Wahlenberg, Kindle and Breger, 1.
    - (Dawsonoceras) cf. annulatum Sowerby, Kindle and Breger, 1.
    - (Dawsonoceras) annulatum var. americanum Foord, Kindle and Breger, 1.
    - (Kionoceras) delphiensis n. sp., Kindle and Breger, 1.
    - extremum n. sp., Parks, 1.
    - (Kionoceras) kentlandensis n. sp., Kindle and Breger, 1.
    - medullare Hall, Kindle and Breger, 1.
    - (Geisonoceras) niagarense Hall, Kindle and Breger, 1.
    - (Kionoceras) orus Hall, Kindle and Breger, 1.
    - pulcher n. sp., Parks, 1.
    - sp., Parks, 1.
  - Orthodactylus E. Hitchcock, Lull, 1.
    - floriferus E. Hitchcock, Lull, 1.
    - introvergens E. Hitchcock, Lull, 1.
    - linearis E. Hitchcock, Lull, 1.
  - Orthosurcula n. gen., Casey, 1.
  - Orthothetes bellulus Clarke, Raymond (P. E.), 1, 2.
    - chemungensis Conrad, Raymond (P. E), 2.
    - chemungensis var. arctistriatus Hall, Raymond (P. E.), 1.
    - chemungensis var. pectinacea Hall, Raymond (P. E.), 1.
    - subplanus Conrad, Kindle and Breger, 1.
  - Orycterocetus Leidy, Case, 4.
    - crocodilinus (?) Cope, Case, 4.
  - Osteopygis Cope, Wieland, 1.
    - gibbi n. sp., Wieland, 1.
  - Ostrea arrosis n. sp., Aldrich, 1.
    - carolinensis Conrad, Glenn, 5.
    - percrassa Conrad, Glenn, 5.
    - sellæformis var. thomasii (Conrad), Glenn, 5.
    - trigonalis Conrad, Glenn, 5.
    - sp., Glenn, 5.
  - Otodus obliquus Agassiz, Eastman, 6.
  - Otouphepus n. gen., Cushman, 1.
    - magnificus n. sp., Cushman, 1.
  - Otozoum E. Hitchcock, Lull, 1.
    - caudatum C. H. Hitchcock, Lull, 1.
    - moodii E. Hitchcock, Lull, 1.
    - parvum C. H. Hitchcock, Lull, 1.
  - Oxydactylus n. gen., Peterson, 1.
  - Oxydactylus, Matthew (W. D.), 2.
    - brachyodontus n. sp., Peterson, 1.
    - brachyodontus, Matthew (W. D.), 2.
    - longipes n. sp., Peterson, 1.
    - longipes, Matthew (W. D.), 2.
  - Oxyrhina Agassiz, Eastman, 6.
    - desorii Agassiz, Eastman, 6.
    - hastalis Agassiz, Eastman, 6.
    - minuta Agassiz, Eastman, 6.
    - sillimani Gibbes, Eastman, 6.

Paleontology—Continued.

- *Genera and species described*—Continued.
  - Pachydiscus lævicanaliculatus n. sp., Lasswitz, 1.
  - Palæodictyon magnum laxum n. subsp., Ulrich, 1.
    - singulare Heer, Ulrich, 1.
  - Palæomeryx, Douglass, 1.
  - Palæomeryx, Matthew (W. D.), 1.
    - americanus n. sp., Douglass, 1.
    - americanus Douglass, Matthew (W. D.), 1.
    - antilopinus Scott, Matthew (W. D.), 1.
    - borealis Cope, Matthew (W. D.), 1.
    - madisonius n. sp., Douglass, 1.
    - madisonius Douglass, Matthew (W. D.), 1.
    - sp., Matthew (W. D.), 1.
  - Palamopus E. Hitchcock, Lull, 1.
    - anomalus E. Hitchcock, Lull, 1.
    - divaricans (E. Hitchcock), Lull, 1.
    - gracilipes (E. Hitchcock), Lull, 1.
    - rogersianus (E. Hitchcock), Lull, 1.
  - Paleopinna sp. undet., Kindle and Breger, 1.
  - Paleorhinus bransoni n. gen. and sp., Williston, 5.
  - Paleschara, Cumings, 1.
  - Paliurus integrifolius Hollick, Hollick, 2.
  - Palmicellaria convoluta n. sp., Ulrich and Bassler, 4.
    - punctata n. sp., Ulrich and Bassler, 4.
  - Pandora (Clidiophora) crassidens Conrad, Glenn, 5.
    - (Kennerleyia) lata Dall, Glenn, 5.
  - Panopea americana Conrad, Glenn, 5.
    - goldfussi Wagner, Glenn, 5.
    - whitfieldi Dall, Glenn, 5.
  - Papyridea harrimani n. sp., Dall, 1.
  - Paracyathus vaughani Gane, Vaughan, 3.
  - Parahippus Leidy, Gidley, 1.
  - Paralia sulcata (Ehrenberg), Boyer, 1.
  - Paramya subovata Conrad, Glenn, 5.
  - Paratropites Mojsisovics, Smith (J. P.), 2.
    - dittmari Mojsisovics, Smith (J. P.), 2.
  - Pariotichus Cope, Broili, 1.
    - aduncus Cope, Broili, 1.
    - aguti Cope, Broili, 1.
    - brachyops Cope, Broili, 1.
    - incisivus Cope, Broili, 1.
    - isolomus Cope, Broili, 1.
    - ordinatus Cope, Broili, 1.
    - ordinatus Cope, Case, 1.
    - sp., Cope, Case, 1.
  - Patriofelis ferox (Marsh), Osborn, 11.
  - Pecten (Pseudamusium) cerinus Conrad, Glenn, 5.
    - (Chlamys) clintonius Say, Glenn, 5.
    - (Chlamys) coccymelus Dall, Glenn, 5.
    - (Amusium) humphreysii Conrad, Glenn, 5.
    - (Pecten) humphreysii Conrad, Glenn, 5.
    - (Chlamys) jeffersonius Say, Glenn, 5.
    - jeffersonius var. edgecombensis (Conrad), Glenn, 5.
    - jeffersonius var. septenarius Say, Glenn 5.
    - (Chlamys) madisonius Say, Glenn, 5.
    - (Chlamys) marylandicus Wagner, Glenn, 5.

Paleontology—Continued.
- *Genera and species described*—Continued.
  - Pecten (Amusium) mortoni Ravenel, Glenn, 5.
    - (Chlamys) rogersi Conrad, Glenn, 5.
    - (Chlamys) sp., Dall, 1.
  - Pelecorapis Cope, Cragin, 1.
    - microlepis n. sp., Cragin, 1.
    - varius Cope, Cragin, 1.
  - Pentamerus oblongus var. compressa n. var., Kindle and Breger, 1.
    - oblongus var. cylindricus Hall and Whitfield, Kindle and Breger, 1.
  - Pentremites koninckanus Hall, Rowley, Greene, 3.
  - Peraceras superciliosus Cope, Osborn, 9.
  - Periploma peralta Conrad, Glenn, 5.
  - Perischodomus M'Coy, Klem, 1.
    - illinoiensis Worthen and Miller, Klem, 1.
  - Petigopora Ulrich, Ulrich and Bassler, 2.
    - offula n. sp., Ulrich and Bassler, 2.
  - Petricola calvertensis Dall, Glenn, 5.
    - harrisii Dall, Glenn, 5.
  - Phacodiscus calvertensis n. sp., Martin, 6.
  - Phacoides (Pseudomiltha) anodonta, Say, Glenn, 5.
    - (Lucinoma) contractus (Say), Glenn, 5.
    - (Parvilucina) crenulatus (Conrad), Glenn, 5.
    - (Lucinisca) cribrarius (Say), Glenn, 5.
    - (Pseudomiltha) foremani (Conrad), Glenn, 5.
    - (Parvilucina) prunus Dall, Glenn, 5.
    - (Here) trisulcatus (Conrad), Glenn, 5.
    - ? sp., Dall, 1.
  - Phacops cf. pulchellus Foerste, Kindle and Breger, 1.
  - Phaseolites manhassettensis n. sp., Hollick, 2.
  - Phenacodus primævus Cope, Osborn, 11.
  - Pholas (Thovana) producta Conrad, Glenn, 5.
  - Pholidocidaris Meek and Worthen, Klem, 1.
    - irregularis Meek and Worthen, Klem, 1.
  - Pholidops hamiltoniæ Hall, Raymond, 2.
    - oblata Hall, Raymond, 2.
  - Pholidostrophia iowaensis Owen, Raymond (P. E.), 1, 2.
    - niagarensis n. sp., Kindle and Breger, 1.
  - Phragmoceras angustum Newell, Kindle and Breger, 1.
    - cf. ellipticum H. & W., Kindle and Breger, 1.
    - parvum Hall and Whitfield, Kindle and Breger, 1.
  - Phyllites saundersi n. sp., Knowlton, 1.
  - Phyllograptus Hall, Ruedemann, 1.
    - angustifolius Hall, Ruedemann, 1.
    - anna Hall, Ruedemann, 1.
    - ilicifolius Hall, Ruedemann, 1.
    - typus Hall, Ruedemann, 1.
  - Physa humerosa Gould, Springer, 1.
  - Picea harrimani n. sp., Knowlton, 1.
  - Pieris scrobiculata n. sp., Hollick, 1.
  - Pinus L., Perkins, 6.
    - conoides n. sp., Perkins, 6.
    - cuneatus n. sp., Perkins, 6.
    - delicatulus n. sp., Berry, 1.
    - ? sp., Knowlton, 1.

Paleontology—Continued.
- *Genera and species described*—Continued.
  - Pisania (Celatoconus) protractus (Conrad), Martin, 3.
  - Pisocrinus glabellus n. sp., Rowley, 1.
    - globosus ? Ringueberg, Rowley, 1.
    - gorbyi ? S. A. Miller, Rowley, 1.
    - granulosus n. sp., Rowley, 1.
  - Placenticeras placenta De Kay, Lasswitz, 1.
  - Placerias n. gen., Lucas, 1.
    - hesternus n. sp., Lucas, 1.
  - Planorbulina, d'Orbigny, Bagg, 3.
    - mediterranensis d'Orbigny, Bagg, 3.
  - Platigonus Le Conte, Matthew and Gidley, 1.
  - Platyceras (Diaphorostoma) cornutum Hisinger, Kindle and Breger, 1.
  - Platyostoma lineata Conrad, Parks, 1.
  - Platypterna E. Hitchcock, Lull, 1.
    - concamerata (E. Hitchcock), Lull, 1.
    - deaniana E. Hitchcock, Lull, 1.
    - delicatula (E. Hitchcock), Lull, 1.
    - digitigrada E. Hitchcock, Lull, 1.
    - gracillima E. Hitchcock, Lull, 1.
    - recta (E. Hitchcock), Lull, 1.
    - tenuis E. Hitchcock, Lull, 1.
  - Plectambonites cf. sericeus Sowerby, Kindle and Breger, 1.
  - Plesiornis E. Hitchcock, Lull, 1.
    - mirabilis E. Hitchcock, Lull, 1.
    - pilulatus E. Hitchcock, Lull, 1.
  - Plethomytilus cuneatus n. sp., Kindle and Breger, 1.
  - Pleuristion brachycœlus n. gen. and sp., Case, 1.
  - Pleurocœlus, Lucas, 2.
  - Pleurofusia De Greg., Casey, 1.
  - Pleuroliria De Greg., Casey, 1.
    - albida Perry, Casey, 1.
    - barretti Guppy, Casey, 1.
    - cochlearis Con., Casey, 1.
    - crenulosa n. sp., Casey, 1.
    - jacksonella n. sp., Casey, 1.
    - simplex n. sp., Casey, 1.
    - subsimilis n. sp., Casey, 1.
  - Pleurophorella n. gen., Girty, 1.
    - papillosa n. sp., Girty, 1.
  - Pleurotoma (Hemipleurotoma) albida Perry, Martin, 3.
    - (Hemipleurotoma) bellacrenata Conrad, Martin, 3.
    - (Hemipleurotoma) calvertensis n. sp., Martin, 3.
    - (Hemipleurotoma) choptankensis n. sp., Martin, 3.
    - (Hemipleurotoma) communis Conrad, Martin, 3.
    - (Hemipleurotoma) communis var. protocommunis n. var., Martin, 3.
  - Pleurotomaria adjutor Hall, Parks, 1.
    - ? axion Hall, Kindle and Breger, 1.
    - delicatula var. camera n. var., Parks, 1.
    - eloroidea n. sp., Kindle and Breger, 1.
    - cf. eloroidea, Kindle and Breger, 1.
    - hoyi Hall, Kindle and Breger, 1.
    - ? idia Hall, Kindle and Breger, 1.
    - laphami Whitfield, Kindle and Breger, 1.
    - pauper Hall, Kindle and Breger, 1.

Paleontology—Continued.
- *Genera and species described*—Continued.
  - Pleurotomaria sp. undet., Kindle and Breger, 1.
  - Plicatula densata Conrad, Glenn, 5.
  - Pliohippus Marsh, Gidley, 1.
  - Protolenus, Matthew (G. F.), 3.
  - Poacites sp., Hollick, 2.
  - Podozamites angustifolius (Eichw.) Schimp., Hollick, 2.
  - Pœbrotherium, Matthew (W. D.), 2.
    - eximium, Matthew (W. D.), 2.
    - labiatum, Matthew (W. D.), 2.
    - wilsoni, Matthew (W. D.), 2.
  - Pœcilozonites (Bld.), Gulick, 1.
    - bermudensis Pfr., Gulick, 1.
    - bermudensis var. zonatus Verrill, Gulick, 1.
    - circumfirmatus Redf., Gulick, 1.
    - circumfirmatus var. discrepans Pfr., Gulick, 1.
    - cupula n. sp., Gulick, 1.
    - dalli n. sp., Gulick 1.
    - nelsoni var. callosus n. var., Gulick, 1.
    - reinianus Pfr., Gulick, 1.
  - Polemarchus E. Hitchcock, Lull, 1.
    - gigas E. Hitchcock, Lull, 1.
  - Polymorpha gibba (d'Orbigny), Bagg, 3.
  - Polymorphina d'Orbigny, Bagg, 3.
    - compressa d'Orbigny, Bagg, 3.
    - compressa var. striata n. var., Bagg, 3.
    - elegantissima Parker and Jones, Bagg, 3.
    - lactea (Walker and Jacob) Bagg, 3.
    - regina Brady, Parker, and Jones, Bagg, 3.
  - Polynices (Neverita) duplicatus (Say) Martin, 3.
    - (Lunatia) homicryptus (Gabb), Martin, 3.
    - (Lunatia) heros (Say), Martin, 3.
  - Polypora, Cumings, 1.
  - Polystomella Lamarck, Bagg, 3.
    - striatopunctata (Fichtel and Moll), Bagg, 3.
  - Porodiscus concentricus (Ehrenberg), Martin, 6.
  - Portheus molossus Cope, Osborn, 10.
  - Potamotherium E. Geoffroy, Matthew and Gidley, 1.
    - lacota n. sp., Matthew, Matthew and Gidley, 1.
  - Prasopora patera n. sp., Ulrich and Bassler, 2.
  - Premnophyllum trigonum Vel., Hollick, 2.
  - Prestwichia signata n. sp., Beecher, 1.
  - Priscodelphinus? crassangulum n. sp., Case, 4.
    - gabbi Cope, Case, 4.
    - grandævus Leidy, Case, 4.
    - lacertosus Cope, Case, 4.
    - ruschenbergeri Cope, Case, 4.
    - uræus Cope, Case, 4.
  - Procamelus, Matthew (W. D.), 2.
    - lacustris n. sp., Douglass, 1.
    - madisonius n. sp., Douglass, 1.
  - Proclydonautilus Mojsisovics, Smith (J. P.), 2.
    - triadicus Mojsisovics, Smith (J. P.), 2.
  - Proetus sp., Parks, 1.
  - Propleura borealis n. sp., Wieland, 1.
  - Prosthennops n. gen., Gidley, Matthew and Gidley, 1.
    - crassigenis n. sp., Gidley, Matthew and Gidley, 1.
  - Protohippus Leidy, Gidley, 1.
  - Protolabis, Matthew, 2.
    - montanus n. sp., Douglass, 1.
  - Protomeryx, Matthew (W. D.), 2.
    - hallii, Matthew (W. D.), 2.
  - Protophyllocladus subintegrifolius (Lesq.) Berry, Berry, 1.
  - Protopora n. gen., Greene, 1.
  - Protorohippus venticolus, Osborn, 11.
  - Protosurcula n. gen., Casey, 1.
    - gabbi Con., Casey, 1.
    - plenta H. & A., Casey, 1.
    - tenuirostris n. sp., Casey, 1.
  - Protothaca grewingkii n. sp., Dall, 1.
    - ? sp., Dall, 1.
  - Protrachyceras Mojsisovics, Smith (J. P.), 2.
  - Prunoides n. gen., Perkins, 6.
    - bursæformis (Lx.), Perkins, 6.
    - seelyi n. sp., Perkins, 6.
  - Psammobia gubernatoria n. sp., Glenn, 5.
  - Pseudauliscus spinosus (Christian), Boyer, 1.
  - Pseudobradypus unguifer Dawson, Matthew, 1.
  - Pseudocrinites Pearce, Schuchert, 4.
    - abnormalis n. sp., Schuchert, 4.
    - clarki Schuchert, Schuchert, 4.
    - claypolei n. sp., Schuchert, 4.
    - elongatus n. sp., Schuchert, 4.
    - gordoni Schuchert, Schuchert, 4.
    - perdewi Schuchert, Schuchert, 4.
    - stellatus Schuchert, Schuchert, 4.
    - subquadratus n. sp., Schuchert, 4.
  - Pseudolabis, Matthew (W. D.), 2.
    - dakotensis n. gen. and sp., Matthew (W. D.), 2.
    - dakotensis, Matthew (W. D.), 2.
  - Pseudomonotis Beyrich, Smith (J. P.), 2.
    - subcircularis Gabb, Smith (J. P.), 2.
  - Psilocochlis n. subg., Dall, 3.
    - mccallie n. sp., Dall, 3.
  - Pteranodon Marsh, Eaton, 1.
    - longiceps Marsh, Eaton, 1.
  - Pterinea sp. undet., Kindle and Breger, 1.
  - Pterospermites alaskana n. sp., Knowlton, 1.
    - magnifolia n. sp., Knowlton, 1.
  - Ptilograptus Hall, Ruedemann, 1.
    - geinitzianus Hall, Ruedemann, 1.
    - plumosus Hall, Ruedemann, 1.
    - tenuissimus n. sp., Ruedemann, 1.
  - Ptychocladia n. gen., Ulrich and Bassler, 1.
    - agellus n. sp., Ulrich and Bassler, 1.
  - Ptychosalpinx altilis (Conrad), Martin, 3.
    - lienosa Conrad, Martin, 3.
    - multirugata Conrad, Martin, 3.
  - Ptychospira sexplicata (White and Whitfield), Greger, 1.
  - Puffinus conradi Marsh, Case, 4.
  - Pyrula harrisi n. sp., Martin, 3.
  - Quercus eoprinoides n. sp., Berry, 1.
    - hollickii Berry, Berry, 1.
    - lehmanii n. sp., Hollick, 1.
    - morrisoniana Lesq., Hollick, 2.
  - Raja ? dux Cope, Eastman, 6.

Paleontology—Continued.
- *Genera and species described*—Continued.
  - Retepora doverensis n. sp., Ulrich and Bassler, 4.
  - Reticularia proxima n. sp., Kindle and Breger, 1.
    - sp., Kindle and Breger, 1.
  - Retiograptus Hall, Ruedemann, 1.
    - tentaculatus Hall, Ruedemann, 1.
  - Retiphycus hexagonale n. gen. and sp., Ulrich, 1.
  - Retusa (Cylichnina) conulus (Deshayes), Martin, 3.
    - (Cylichnina) marylandica n. sp., Martin, 3.
    - (Cylichnina) subspissa (Conrad), Martin, 3.
  - Rhabdosteus latiradix Cope, Case, 4.
  - Raphoneis gemmifera Ehrenberg, Boyer, 1.
  - Rhinoceros crassus Leidy, Osborn, 9.
    - hesperius Leidy, Osborn, 9.
    - longipes Leidy, Osborn, 9.
    - meridianus Leidy, Osborn, 9.
    - proterus, Leidy, Osborn, 9.
  - Rhipidomella circularis Hall (?), Kindle and Breger, 1.
    - hybrida Sowerby, Kindle and Breger, 1.
    - vanuxemi Hall, Raymond, 2.
  - Rhoechinus Keeping, Klem, 1.
    - burlingtonensis Meek and Worthen, Klem, 1.
    - gracilis Meek and Worthen, Klem, 1.
  - Rhombotrypa n. gen., Ulrich and Bassler, 2.
  - Rhopalodictyum calvertense n. sp., Martin, 6.
    - marylandicum n. sp., Martin, 6.
  - Rhopalonaria Ulrich, Ulrich and Bassler, 1.
    - attenuata n. sp., Ulrich and Bassler, 1.
    - keokukensis n. sp., Ulrich and Bassler, 1.
    - medialis n. sp., Ulrich and Bassler, 1.
    - robusta n. sp., Ulrich and Bassler, 1.
    - tenuis n. sp., Ulrich and Bassler, 1.
    - venosa Ulrich, Ulrich and Bassler, 1.
  - Rhus milleri n. sp., Hollick, 1.
  - Rhynchodus pertenuis n. sp., Eastman, 2.
  - Rhynchopora King, Greger, 2.
    - beecheri n. sp., Greger, 2.
    - illinoisensis (Worthen), Greger, 2.
  - Rissoa (Onoba) marylandica n. sp., Martin, 3.
    - sp., Martin, 3.
  - Rotalia Lamarck, Bagg, 3.
    - beccarii (Linné), Bagg, 3.
    - beccarii var. brœckhiana Karrer, Bagg, 3.
  - Rubioides n. gen., Perkins, 6.
    - lignita n. sp., Perkins, 6.
  - Ruscula n. gen., Casey, 1.
    - extricata n. sp., Casey, 1.
    - plicata Lea, Casey, 1.
  - Sagenites Mojsisovics, Smith (J. P.), 2.
    - (Trachysagenites) herbichi Mojsisovics, Smith (J. P.), 2.
  - Sagrina d'Orbigny, Bagg, 3.
    - spinosa n. sp., Bagg, 3.
  - Sapindoides n. gen., Perkins, 6.
    - americanus (Lx.), Perkins, 6.
    - cylindricus n. sp., Perkins, 6.
    - medius n. sp., Perkins, 6.
    - minimus n. sp., Perkins, 6.

Paleontology—Continued.
- *Genera and species described*—Continued.
  - Sapindoides parva n. sp., Perkins, 6.
    - varius n. sp., Perkins, 6.
    - vermontanus n. sp., Perkins, 6.
  - Sapindus imperfectus n. sp., Hollick, 2.
  - Sassafras hastatum Newb., Hollick, 2.
    - progenitor Newb., Berry, 1.
  - Saxicava arctica (Linné), Glenn, 5.
  - Saxidomus popofianus n sp., Dall, 1.
  - Scala (Opalia) calvertensis n. sp., Martin, 3.
    - (Stenorhytis) expansa Conrad, Martin, 3.
    - marylandica n. sp., Martin, 3.
    - (Sthenorhytis) pachypleura Conrad, Martin, 3.
    - (Opalia) prunicola n. sp., Martin, 3.
    - (Opalia) reticulata n. sp., Martin, 3.
    - sayana Dall, Martin, 3.
  - Scalaspira Conrad, Martin, 3.
    - strumosa Conrad, Martin, 3.
  - Scaphella (Aurinia) mutabilis (Conrad) Martin, 3.
    - (Aurinia) obtusa (Emmons), Martin, 3.
    - solitaria (Conrad), Martin, 3.
    - (Aurinia) typus (Conrad), Martin, 3.
  - Sceptroneis caduceus Ehrenberg, Boyer, 1.
  - Schizoblattina n. gen., Sellards, 1.
    - multinervia n. sp., Sellards, 1.
  - Schizolopha sp., Kindle and Breger, 1.
  - Schizoporella cumulata n. sp., Ulrich and Bassler, 4.
    - doverensis n. sp., Ulrich and Bassler, 4.
    - informata (Lonsdale), Ulrich and Bassler, 4.
    - latisinuata n. sp., Ulrich and Bassler, 4.
    - subquadrata n. sp., Ulrich and Bassler, 4.
  - Schloenbachia austinensis F. Roemer, Lasswitz, 1.
    - austinensis Roemer var. nov. minima, Lasswitz, 1.
    - bourgeoisi d'Orb. em. Gross. var. americana n. var., Lasswitz, 1.
    - dentato-carinata F. Roemer, Lasswitz, 1.
    - evæ n. sp., Lasswitz, 1.
    - frechi n. sp. Lasswitz, 1.
    - frechi var. curvata n. var., Lasswitz, 1.
    - haberfellneri v. Hauer, Lasswitz, 1.
    - kiliani n. sp., Lasswitz, 1.
    - leonensis Conrad, Lasswitz, 1.
    - leonensis Conrad, var. nov. maxima, Lasswitz, 1.
    - quattuornodosa n. sp., Lasswitz, 1.
    - quattuornodosa var. planata n. var., Lasswitz, 1.
    - quinquenodosa Redtenbacher var. minuta n. var., Lasswitz, 1.
    - roemeri n. sp., Lasswitz, 1.
    - roemeri var. elegantior n. var., Lasswitz, 1.
    - roemeri var. harpax, n. var., Lasswitz, 1.
    - sequens Gross, Lasswitz, 1.
    - texana F. Roemer, Lasswitz, 1.
  - Schuchertella n. n., Girty, 1.
  - Scutella aberti Conrad, Clark, 3.
  - Seila adamsii (H. C. Lea), Martin, 3.
  - Selenichnus E. Hitchcock, Lull, 1.
    - breviusculus E. Hitchcock, Lull, 1.
    - falcatus E. Hitchcock, Lull, 1.

Paleontology—Continued.
Genera and species described—Continued.
Semele carinata (Conrad), Glenn, 5.
  carinata var. compacta Dall, Glenn, 5.
  subovata (Say), Glenn, 5.
Septastrea marylandica (Conrad), Vaughan, 3.
Sequoia gracillima (Lesq.) Newb., Berry, 1, 2.
  penhallowii n. sp., Jeffrey, 1.
  reichenbachi (Gein.) Heer, Berry, 1.
  (cone), Knowlton, 1.
Seymouria baylorensis n. gen. and sp., Broili, 1.
Shepardia E. Hitchcock, Lull, 1.
  palmipes E. Hitchcock, Lull, 1.
Sigaretus fragilis Conrad, Martin, 3.
Sigmagraptus n. gen., Ruedemann, 1.
  præcursor n. sp., Ruedemann, 1.
Sillimanius E. Hitchcock, Lull, 1.
  gracilior E. Hitchcock, Lull, 1.
  tetradactylus E. Hitchcock, Lull, 1.
Siphonalia? calvertana n. sp., Martin, 3.
  devexa (Conrad), Martin, 3.
  marylandica n. sp., Martin, 3.
  migrans (Conrad), Martin, 3.
Siphonocetus clarkianus Cope, Case, 4.
  expansus Cope, Case, 4.
  priscus Cope, Case, 4.
Skenidium? nodocostatum n. sp., Rowley, 1.
Solarium amphiternum Dall, Martin, 3.
  trilineatum Conrad, Martin, 3.
Solecardia (Spaniorinus) cossmanni Dall, Glenn, 5.
Sonneratia acuto-carinata Shum., Lasswitz, 1.
  acuto-carinata Shum. var. multifida Steinm., Lasswitz, 1.
  supani n. sp., Lasswitz, 1.
Sphærexochus romingeri Hall, Kindle and Breger, 1.
Sphærocystites Hall, Schuchert, 4.
  bloomfieldensis n. sp., Schuchert, 4.
  globularis Schuchert, Schuchert, 4.
  globularis ovalis n. var., Schuchert, 4.
  multifasciatus Hall, Schuchert, 4.
Sphenia dubia (H. C. Lea), Glenn, 5.
Sphenodiscus pleurisepta Conrad, Lasswitz, 1.
Sphyrna prisca Agassiz, Eastman, 6.
Spiloblattina, Sellards, 1.
  maledicta, Sellards, 1.
Spirifer (Reticularia) crispus var. simplex Hall, Kindle and Breger, 1.
  foggi Nettleroth, Kindle and Breger, 1.
  mucronatus Conrad, Raymond (P. E.), 1, 2.
  nobilis Barrande, Kindle and Breger, 1.
  radiatus Sowerby, Kindle and Breger, 1.
Spiroloculina d'Orbigny, Bagg, 3.
  grata Terquem, Bagg, 3.
  tenuis (Czjzek), Bagg, 3.
Spirorbis calvertensis n. sp., Martin, 5.
Spisula callistæformis n. sp., Dall, 1.
  (Hemimactra?) chesapeakensis n. sp., Glenn, 5.
  (Hemimactra) confraga (Conrad), Glenn, 5.
  (Hemimactra) curtidens Dall, Glenn, 5.
  (Hemimactra) delumbis (Conrad), Glenn, 5.
  (Hemimactra) marylandica Dall, Glenn, 5.

Paleontology—Continued.
Genera and species described—Continued.
Spisula (Hemimactra) subparilis (Conrad), Glenn, 5.
  (Hemimactra) subponderosa (d'Orbigny), Glenn, 5.
  sp., Dall, 1.
Spongasteriscus marylandicus n. sp., Martin, 6.
Sportella patuxentia n. sp., Glenn, 5.
  pelex Dall, Glenn, 5.
  petropolitana Dall, Glenn, 5.
  recessa n. sp., Glenn, 5.
  whitfieldi Dall, Glenn, 5.
Squalodon atlanticus Leidy, Case, 4.
  protervus Cope, Case, 4.
Squatina Duméril, Eastman, 6.
  occidentalis n. sp., Eastman, 6.
Staurocystis Haeckel, Schuchert, 4.
Staurograptus Emmons, Ruedemann, 1.
  dichotomus Emmons, Ruedemann, 1.
  dichotomus var. apertus n. var., Ruedemann, 1.
Stegomus longipes, Emerson and Loomis, 1.
  longipes, Lull, 2.
Steneofiber pansus Cope, Matthew and Gidley, 1.
Stenonyx nom. nov., Lull, 1.
  lateralis (E. Hitchcock), Lull, 1.
Stephanopyxis corona (Ehrenberg), Boyer, 1.
Stereocrinus? indianensis M. & G., Rowley, Greene, 2.
Steropoides E. Hitchcock, Lull, 1.
  elegans E. Hitchcock, Lull, 1.
  infelix Hay, Lull, 1.
  ingens E. Hitchcock, Lull, 1.
  loripes (E. Hitchcock), Lull, 1.
  uncus (E. Hitchcock), Lull, 1.
Stichocapsa macropora Vinassa, Martin, 6.
Stigmatella n. gen., Ulrich and Bassler, 2.
  clavis (Ulrich), Ulrich and Bassler, 2.
  crenulata n. sp., Ulrich and Bassler, 2.
  interporosa n. sp., Ulrich and Bassler, 2.
  irregularis (Ulrich), Ulrich and Bassler, 2.
  nana n. sp., Ulrich and Bassler, 2.
  nicklesi n. sp., Ulrich and Bassler, 2.
  personata n. sp., Ulrich and Bassler, 2.
  spinosa n. sp., Ulrich and Bassler, 2.
Stoliczkaia ex. aff. dispar d'Orb., Lasswitz, 1.
Streptomytilus n. gen., Kindle and Breger, 1.
  wabashensis n. sp., Kindle and Breger, 1.
Stribalocystis? elongatus Rowley, 1.
  missouriensis Rowley, Rowley, 1.
Stromatocerium Hall, Seely, 2.
  eatoni n. sp., Seely, 2.
  lamottense n. sp., Seely, 2.
  lamottense var. chazianum, Seely, 2.
  ? moniliferum n. sp., Seely, 2.
  rugosum Hall, Seely, 2.
Stromatopora tubulifera n. sp., Parks, 1.
Strophalosia truncata Hall, Raymond (P. E.), 1, 2.
Stropheodonta concava Hall, Raymond (P. E.), 2.
  cf. corrugata Conrad, Kindle and Breger, 1.
  demissa Hall, Raymond (P. E.), 2.
  inæquistriata Conrad, Raymond (P. E.), 1, 2.

Paleontology—Continued.
Genera and species described—Continued.
Stropheodonta junia Hall, Raymond (P. E.), 2.
perplana Conrad, Raymond (P. E.), 1, 2.
Strophograptus n. gen., Ruedemann, 1.
trichomanes n. sp., Ruedemann, 1.
Strophonella daytonensis n. n., Foerste, 2.
cf. striata Hall, Kindle and Breger, 1.
williamsi n. sp., Kindle and Breger, 1.
Succinea bermudensis Pfr., Gulick, 1.
Sula loxostyla Cope, Case, 4.
Surcula biscatenaria Conrad, Martin, 3.
engonata Conrad, Martin, 3.
mariana n. sp., Martin, 3.
marylandica Conrad, Martin, 3.
rotifera Conrad, Martin, 3.
rugata Conrad, Martin, 3.
Surculoma n. gen., Casey, 1.
Sustenodactylus nom. nov., Lull, 1.
curvatus (E. Hitchcock), Lull, 1.
Syllæmus Cope, Cragin, 1.
latifrons Cope, Cragin, 1.
Syringostoma aurora n. sp., Parks, 1.
densum Nicholson, Parks, 1.
restigouchense Spencer, Parks, 1.
Tachyrhynchus perlaqueatus (Conrad), Martin, 3.
Tagassu Frisch, Matthew and Gidley, 1.
Tarsodactylus E. Hitchcock, Lull, 1.
caudatus E. Hitchcock, Lull, 1.
expansus C. H. Hitchcock, Lull, 1.
Tarsoplectrus nom. nov., Lull, 1.
angustus (E. Hitchcock), Lull, 1.
elegans (C. H. Hitchcock), Lull, 1.
Taxodium laramianum n. sp., Penhallow, 1.
Teinostoma calvertense n. sp., Martin, 3.
greensboroense n. sp., Martin, 3.
liparum (H. C. Lea), Martin, 3.
nanum (Lea), Martin, 3.
Teleoceras major Hatcher, Osborn, 9.
medicornutus n. sp., Osborn, 9.
Teleorhinus n. gen., Osborn, 8.
browni n. sp., Osborn, 8.
Tellina æquistriata Say, Glenn, 5.
(Angulus) declivis Conrad, Glenn, 5.
(Angulus) dupliniana Dall, Glenn, 5.
(Angulus) producta Conrad, Glenn, 5.
(Angulus) umbra Dall, Glenn, 5.
sp., Dall, 1.
Tellinomya cf. nasuta Hall, Kindle and Breger, 1.
Temnograptus Nicholson, Ruedemann, 1.
noveboracensis n. sp., Ruedemann, 1.
Terebellina n. gen., Ulrich, 1.
palachei n. sp., Ulrich, 1.
Terebra (Acus) curvilineata Dall, Martin, 3.
(Acus) curvilineata var. calvertensis n. var., Martin, 3.
(Acus) curvilineata var. dalli n. var., Martin, 3.
(Acus) curvilineata var. whitfieldi n. var. Martin, 3.
(Acus) curvilirata Conrad, Martin, 3.
(Hastula) inornata Whitfield, Martin, 3.
(Hastula) patuxentia n. sp., Martin, 3.
(Hastula) simplex Conrad, Martin, 3.
(Hastula) simplex var. sublirata, Conrad, Martin, 3.
(Acus) sincera Dall, Martin, 3.
unilineata Conrad, Martin, 3.
Teredo ? sp., Dall, 1.
Terminonaris n. n., Osborn, 8.
Terrapene eurypygia (Cope), Hay, 2.
Testudo atascosæ n. sp., Hay, 2.
brontops Marsh, Hay, 1.
osborniana n. sp., Hay, 6.
Tetracystis n. gen., Schuchert, 4.
chrysalis n. sp., Schuchert, 4.
fenestratus n. sp. (Troost), Schuchert, 4.
Tetragraptus Salter, Ruedemann, 1.
amii Lapworth ms., Elles and Wood, em., Ruedemann, 1.
clarkei n. sp., Ruedemann, 1.
fruticosus Hall sp., Ruedemann, 1.
(Etagraptus) lentus n. sp., Ruedemann, 1.
pendens Elles, Ruedemann, 1.
pygmæus n. sp., Ruedemann, 1.
quadribrachiatus Hall (sp.), Ruedemann, 1.
serra Brongniart sp., Ruedemann, 1.
similis Hall (sp.), Ruedemann, 1.
taraxacum Ruedemann, Ruedemann, 1.
woodi n. sp., Ruedemann, 1.
Textularia Defrance, Bagg, 3.
abbreviata d'Orbigny, Bagg, 3.
agglutinans d'Orbigny, Bagg, 3.
articulata d'Orbigny, Bagg, 3.
carinata d'Orbigny, Bagg, 3.
gramen d'Orbigny, Bagg, 3.
sagittula Defrance, Bagg, 3.
subangulata d'Orbigny, Bagg, 3.
Thalattosaurus alexandræ n. gen. and sp., Merriam, 3.
Thecachampsa Cope, Case, 4.
? antiqua (Leidy), Case, 4.
? contusor Cope, Case, 4.
? sericodon Cope, Case, 4.
? sicaria Cope, Case, 4.
Thecodonta (Dicranodesma) calvertensis n. sp., Glenn, 5.
Thenaropus heterodactylis King, Matthew (G. F.), 1.
Theonoa glomerata n. sp., Ulrich and Bassler, 4.
Thracia conradi Couthouy, Glenn, 5.
Thuya sp., Penhallow, 1.
Tomopleura n. gen., Casey, 1.
Toxichnus E. Hitchcock, Lull, 1.
Trachodon annectens, Lucas, 3.
Trachyceras Laube, Smith (J. P.), 2.
(Anolcites) hyatti n. sp., Smith (J. P.), 2.
(Anolcites) meeki Mojsisovics, Smith (J. P.), 2.
(Protrachyceras) shastense n. sp., Smith (J. P.), 2.
Tretulias Cope, Case, 4.
buccatus Cope, Case, 4.
Triænopus E. Hitchcock, Lull, 1.
Triænopus baileyanus E. Hitchcock, Lull, 1.
Tricælocrinus woodmani ? M. & W. Rowley, Greene, 3.

Paleontology—Continued.
  Genera and species described—Continued.
    Tricalycites major n. sp., Hollick, 2.
      papyraceus Newb., Berry, 1.
    Tricarpellites acuminatus n. sp., Perkins, 6.
      amygdaloideus n. sp., Perkins, 6.
      angularis n. sp., Perkins, 6.
      carinatus n. sp., Perkins, 6.
      castanoides n. sp., Perkins, 6.
      contractus n. sp., Perkins, 6.
      daleii n. sp., Perkins, 6.
      elongatus n. sp., Perkins, 6.
      fagoides n. sp., Perkins, 6.
      fissilis (Lx.), Perkins, 6.
      hemiovalis n. sp., Perkins, 6.
      inequalis n. sp., Perkins, 6.
      lignitus n. sp., Perkins, 6.
      major n. sp., Perkins, 6.
      obesus n. sp., Perkins, 6.
      ovalis n. sp., Perkins, 6.
      pringlei n. sp., Perkins, 6.
      rostratus n. sp., Perkins, 6.
      rugosus n. sp., Perkins, 6.
      seelyi n. sp., Perkins, 6.
    Trichechus giganteus ? (De Kay), Case, 4.
    Trigeria lepida Hall, Raymond (P. E.), 1, 2.
    Trigonograptus Nicholson, Ruedemann, 1.
      ensiformis Hall sp., Ruedemann, 1.
    Trihamus E. Hitchcock, Lull, 1.
      elegans E. Hitchcock, Lull, 1.
      magnus C. H. Hitchcock, Lull, 1.
    Trimerella sp., Kindle and Breger, 1.
    Trimeroceras gilberti n. sp., Kindle and Breger, 1.
    Trimerocystis n. gen., Schuchert, 4.
      peculiaris n. sp., Schuchert, 4.
    Trimerorhachis Cope, Broili, 1.
      insignis Cope, Broili, 1.
      insignis (?) Cope, Case, 1.
      leptorhynchus n. sp., Case, 1.
    Trionyx sp., Case, 4.
      cellulosus Cope, Case, 4.
    Tripleurocrinus n. gen., Wood (Elvira), 1.
      levis n. sp., Wood (Elvira), 1.
    Tristylotus n. gen., Parks, 2.
      hexagonus n. sp., Parks, 2.
      rhomboideus n. sp., Parks, 2.
    Triticites n. gen., Girty, 5.
      secalicus Say, Girty, 5.
    Tritonium centrosum (Conrad), Martin, 3.
    Trochita alaskana n. sp., Dall, 1.
    Trochoceras (Sphyradoceras) cf. desplainense, McChesney ?, Kindle and Breger, 1.
    Trocholites Conrad, Whiteaves, 1.
      ammonius Conrad, Whiteaves, 1.
      canadensis Hyatt, Whiteaves, 1.
      planorbiformis Conrad, Whiteaves, 1.
    Troostocrinus ? dubius Rowley, Rowley, 1.
    Trophon chesapeakanus n. sp., Martin, 3.
      tetricus Conrad, Martin, 3.
      tetricus var. lævis n. var., Martin, 3.
      sp., Martin, 3.
    Tropidoleptus carinatus Conrad, Raymond (P. E.), 1, 2.
    Tropisurcula n. gen., Casey, 1.
      caseyi Ald., Casey, 1.
      crenula n. sp., Casey, 1.

Paleontology—Continued.
  Genera and species described—Continued.
    Tropites Mojsisovics, Smith (J. P.), 2.
      dilleri n. sp., Smith (J. P.), 2.
      torquillus Mojsisovics, Smith (J. P.), 2.
    Truncatulina d'Orbigny, Bagg, 3.
      lobatula (Walker and Jacob), Bagg, 3.
      variabilis d'Orbigny, Bagg, 3.
    Trypanotoma Coss., Casey, 1.
      longispira n. sp., Casey, 1.
      obtusa n. sp., Casey, 1.
      terebriformis Meyer, Casey, 1.
    Turbinella ? demissa Conrad, Martin, 3.
      (Psilocochlis) mccallie, Dall, 3.
    Turbonilla (Tragula) gubernatoria n. sp., Martin, 3.
      (Pyrgiscus) interrupta (Totten), Martin, 3.
      (Chemnitzia) nivea Stimpson, Martin, 3.
      (Chemnitzia) nivea Stimpson var., Martin, 3.
    Turrilites brazoensis F. Roemer, Lasswitz, 1.
      peramplus n. sp., Lasswitz, 1.
      wysogorskii n. sp., Lasswitz, 1.
    Turritella æquistriata Conrad, Martin, 3.
      indenta Conrad, Martin, 3.
      plebeia Say, Martin, 3.
      variabilis Conrad, Martin, 3.
      variabilis var., Martin, 3.
      variabilis var. alticostata Conrad, Martin, 3.
      variabilis var. cumberlandia Conrad, Martin, 3.
      variabilis var. exaltata Conrad, Martin, 3.
    Tylocrinus n. gen., Wood (Elvira), 1.
      novus n. sp. Wood (Elvira), 1.
    Typhis acuticosta Conrad, Martin, 3.
    Typopus E. Hitchcock, Lull, 1.
      abnormis E. Hitchcock, Lull, 1.
      gracilis E. Hitchcock, Lull, 1.
    Uintacrinus socialis Grinnell, Hovey (E. O.), 2.
      sp., Whiteaves, 3.
    Ulias Cope, Case, 4.
      moratus Cope, Case, 4.
    Ulmus basicordata n. sp., Hollick, 1.
    Unitrypa, Cumings, 1.
    Urosalpinx cinereus (Say) ?, Martin, 3.
      rusticus (Conrad), Martin, 3.
    Uvigerina d'Orbigny, Bagg, 3.
      canariensis d'Orbigny, Bagg, 3.
      pygmæa d'Orbigny, Bagg, 3.
      tenuistriata Reuss, Bagg, 3.
    Varicobela n. gen., Casey, 1.
    Vaccinium alaskanum n. sp., Knowlton, 1.
    Varanosaurus acutirostris n. gen. and sp., Broili, 1.
    Venericardia castrana n. sp., Glenn, 5.
      granulata Say, Glenn, 5.
      planicosta Lamarck, Dall, 1.
    Venus campechiensis var. capax (Conrad), Glenn, 5.
      campechiensis var. cuneata (Conrad), Glenn, 5.
      campechiensis var. mortoni (Conrad), Glenn, 5.
      campechiensis var. tetrica (Conrad), Glenn, 5.

Paleontology—Continued.
- *Genera and species described*—Continued.
  - Venus ducatelli Conrad, Glenn, 5.
    - mercenaria Linné, Glenn, 5.
    - plena Conrad, Glenn, 5.
    - rileyi Conrad, Glenn, 5.
  - Vermetus graniferus (Say), Martin, 3.
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